



Electrolux

Training

2006

Technical
Training
Manual

Electrolux | ICON

Frigidaire

W White-Westinghouse

Gibson

TAPPAN

Kelvinator

SAFE SERVICING PRACTICES - ALL APPLIANCES

To avoid personal injury and/or property damage, it is important that **Safe Servicing Practices** be observed. The following are some limited examples of safe practices:

1. **DO NOT** attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.
2. Before servicing or moving an appliance:
 - Remove the power cord from the electrical outlet, trip the circuit breaker to the OFF position, or remove the fuse.
 - Turn off the gas supply.
 - Turn off the water supply.
3. Never interfere with the proper operation of any safety device.
4. **USE ONLY REPLACEMENT PARTS CATALOGED FOR THIS APPLIANCE. SUBSTITUTIONS MAY DEFEAT COMPLIANCE WITH SAFETY STANDARDS SET FOR HOME APPLIANCES.**
5. **GROUNDING:** The standard color-coding for safety ground wires is **GREEN**, or **GREEN** with **YELLOW STRIPES**. Ground leads are not to be used as current carrying conductors. It is **EXTREMELY** important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a hazard.
6. Prior to returning the product to service, ensure that:
 - All electrical connections are correct and secure
 - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts
 - All non-insulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
 - All safety grounds (both internal and external) are correctly and securely connected
 - All panels are properly and securely reassembled

Section .01 ATTENTION!!!

This service manual is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. Electrolux Home Products cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this manual.

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Warranty Change Effective January 1, 2006

Electrolux Major Appliances has simplified the warranty on all Frigidaire, White Westinghouse, Tappan, Gibson, and Kelvinator-branded appliances to a one-year manufacturer's warranty. Please note that the Electrolux ICON, Frigidaire Gallery, and Frigidaire Professional brands are excluded from these warranty changes. In the past, some product components (e.g., sealed systems and washer tubs) had extended warranties; however, with this change, these extended warranties will be eliminated. In addition, the warranty coverage on all replacement parts will shift from a one-year warranty to a 90-day limited warranty.

The consumer will benefit from this warranty change by having simplified warranty terms, and through improved product quality and after-sales care. Consumer research shows that warranty is not one of the most critical elements of the purchase decision, and ranks behind other factors such as energy conservation, existing space available for an appliance, and cost of the unit.

The changes in warranty coverage will result in increased profit opportunities for you. A higher percentage of the calls referred to you at no charge by Electrolux will be in the Out-of-Warranty category and subject to the prevailing fair market labor rates in each of your markets. In addition, there are increased margin opportunities through using Genuine Electrolux Parts, proprietary or universal, in repairing finished product.

Be assured, the new, simplified warranties will not affect the expectations of quality within our manufacturing facilities. Electrolux continuously strives to improve the quality and performance of our appliances in order to delight consumers with their purchases and earn their brand loyalty.

Thank you for your continued support of the Electrolux family of brands and our valued consumers.

Serial Number Coding

Example, X A 6 15 12345

Manufacturer Location **X**

Products Identification **A**

Year of Production **6**

Week of Production **15**

Position Produced **12345**

Manufacturing Locations

L = Greenville MI

N = L'Assumption PQ

T = Kingston NC

V = Springfield, TN

W= St. Cloud, MN

X = Web City, IA

B = Anderson, SC

M= LG/Lucky Goldstar

P = Samsung

4 = Juarez, Mexico

Product Identification

A = Refrigerator

B = Freezers

C = Washers

D = Dryers

E = Laundry Centers

F = Ranges

H = Dishwasher

G/P= Microwave

N = Dehumidifier

Electrolux Teams with Lakeland Community College for Service Technician Training

In January 2007, Electrolux in collaboration with Lakeland Community College (Kirtland, OH) will launch a comprehensive hands-on training program focused on servicing major appliances.

The training will be made up of classroom instruction, hands-on practice, troubleshooting and repair. In addition, there is an on-line (web-based) self-study curriculum in basic refrigeration and electricity.

The 3-week course is scheduled to begin on Monday, January 8, 2007 and will continue for three consecutive weeks.

The program will be piloted at Lakeland's new state-of-the-art Industrial Skills Training Center. The Skills Training Center is capable of handling six complete appliance workstations with water, gas and electricity. In addition, a multi-media classroom with multi-media capability will help ensure that the trainees walk away with the necessary knowledge and skills that can immediately be put to use.

Electrolux has donated refrigerators, stoves, dishwashers, clothes washers and dryers, microwaves and outdoor gas grills, all in an effort to support the program.

Lakeland will also work with NASTeC to develop a National Certification Exam. At the end of the 3-week session, trainees will be prepared to take the exam. Depending on the success at Lakeland, the program may be expanded to other partner community colleges throughout the United States.

Discussion is also underway for Lakeland to develop an Associate of Applied Science (AAS) Degree in **Appliance Servicing Technology**. Students who have successfully completed the NASTeC certification exam can receive academic credit towards the completion of the AAS.

Appliance Training Skills 3-Week Program

Dryers:

- a) Electrical components used including switches, timers, electronic controls and sensors
- b) Installation of product; venting, electrical, and plumbing requirements
- c) Importance of proper airflow
- d) Gas burners and controls

Ranges:

- a) Install and discuss proper electrical and plumbing requirements
- b) Discuss types of heating elements
- c) Infinite switches and electronic oven and surface unit controls
- d) Gas burners and converting from natural to LP
- e) Types of ignition systems

Dishwashers:

- a) Proper installation and electrical and plumbing requirements
- b) Address common problems with installation and customer instruct
- c) Proper use of detergent and chemicals and how they work
- d) Pumps, dispensers and water circulation
- e) Mechanical and electronic timers

Top load washers:

- a) Installation and electrical and plumbing requirements
- b) Disassembly and reassembly of complete washer
- c) Proper use of detergent and additives
- d) Identifying chemical damage of clothing
- e) Electrical circuit including mechanical and electronic controls

Front load washers:

- a) Installation and electrical and plumbing requirements
- b) Advantage over top load washers
- c) Disassemble and reassembly of complete washer
- d) Electrical circuit including mechanical and electronic controls

Microwaves:

- a) Installation and electrical and venting requirements
- b) Testing for microwave leakage
- c) Basic theory and testing of components.

Refrigeration – Top Mount and Side-by-Side Refrigerators:

- a) Defrost systems
- b) Proper electrical and plumbing requirements
- c) Ice makers
- d) Water and ice dispensers
- e) Electronic controls
- f) Proper sealed system repairs
- g) Use of torch and high temperature braze
- h) Diagnosing of sealed system
- i) Damper controls
- j) Fast, efficient, and safe way to defrost evaporator coils

How to Register

Contact: Tammy Bailey, Program Assistant for Center for Business & Industry
440-525-7315 or e-mail: **Tbailey@Lakelandcc.edu**

When: Week #1: January 8-12, 2007
Week #2: January 15-19, 2007
Week #3: January 22-26, 2007

Cost: \$1200 for the complete 3-week program, which includes course material but does not include food or lodging

Class Size: Limited to 18 participants, early registration is encouraged.

Elux Express Shipment Program

The Elux-Express Program provides Electrolux authorized distributors with out of stock, functional warranty parts via 2nd day air. Elux Express is intended for **functional warranty parts only!** Electrolux allows each distributor's location to order a maximum of 10 lines with up to 4 pieces per line freight prepaid per day. These orders are only shipped to the parts distributor's location and the orders must be placed to Electrolux by 3:00 pm EST.

Service providers must request Elux-Express when placing their order with the parts distributor. Due to the limited number of lines and pieces allowed it is important to order early. Additionally, Elux-Express only covers the freight charges to the parts distributors therefore, there might in fact, be freight charges to the service company if the package is shipped from the parts distributor to the service company. There may also be additional day(s) delay in getting the part with additional shipping.

Satisfying our consumers is our top priority and as an Electrolux Authorized Service Provider, we know that it is your top priority as well. **ELUX EXPRESS** is the answer to receiving emergency parts quickly in order to satisfy the consumer.

EMA Implements Mandatory Parts Return Program

In September 2005, Electrolux Major Appliances (EMA) announced a mandatory parts return program for its service network, targeting specific parts for return to factory locations around the country.

In December 2005, Electrolux revisited the success of this program to determine which parts were successfully being returned. Various parts were returned by service providers in the EMA service network; however, the volume of parts returned to the factories for component analysis has not allowed significant qualitative research to determine root cause.

EMA must be able to analyze component part failures to substantially improve the quality of its finished goods. This effort requires coordination of a parts return program with our service community, the supply base, and EMA.

To ensure the future success of this program, EMA has placed a parts tracking system in place to better link a service claim to the actual return of a defective part. In the near future, EMA will track any & all claims that contain the parts specific to the parts return program. A complete listing of these parts can be found at the end of this PDF file.

The replacement parts will come with a prepaid FedEx Shipping label (see example below) that will allow you to return the defective part back to EMA for further analysis. This label should be completed as directed in Figure 1.

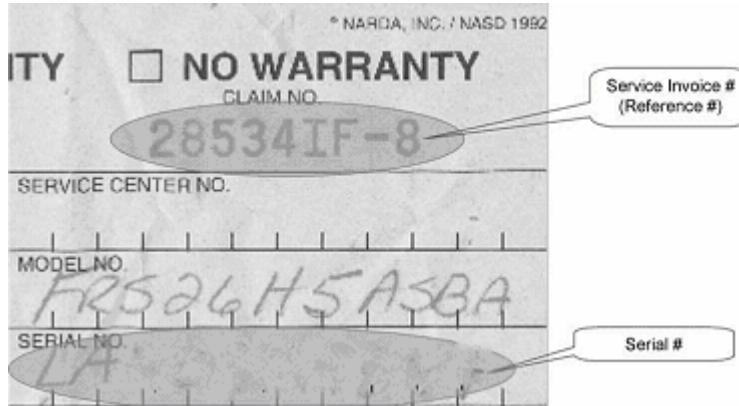
Please note that thoroughly completed FedEx shipping labels and service invoices will provide two things:

- 1) Quick, active release of parts payment
- 2) Improved quality and service solutions.

Thank you for your help in this very important program as we work together to improve product quality, service quality, customer service, and/or acquire technical solutions!

HOW TO RETURN PARTS PROPERLY:

After removing the part from the consumer's unit, either place the defective part in the box the replacement part was sent in or find other adequate packaging for shipping. Place a copy of your service invoice in the box along with the defective part. Be sure to note the service invoice number and the serial number of the appliance. (see below)



Complete the FedEx label that was included with the replacement part. Be sure to include the service invoice number and product serial number on the label. (see below)



Seal the box containing the return part and affix the FedEx parts return label. At your earliest convenience, drop the box off at any FedEx drop box or office. If your business has FedEx pickup, leave the part for your FedEx courier.

Technical Support

Since January 1, 2006, Service Bulletins have been emailed to the e-mail address designated on your ServiceBench account. Please update your information on ServiceBench to get the latest information or for the latest *Service Bulletins, Information Service Manuals and Product Information and Instructional Video*, visit:

www.frigidaire.com/tip Log-on: **service** Password: **tips**

Electrolux Contact Information

Name	Reason for Call	Phone Number	Fax Number
Customer Care Center M-F 9am-5:30pm EST	Consumer Issues (Excluding replacements)	706-860-4110 (Option 1)	706-651-7135
National Locator M-F 8am-4:30pm EST	Parts, Service, Dealer, Use and Care Guides	800-444-4944	
Outdoor Kitchen Support Line M-F 8 am-5pm EST	Parts, Accessories, Repair, Service, User Manuals	800-320-0859 (Option 1) Part Questions, Accessory & part orders (Option 2) User Manuals, (Option 3) Design, Installation & Operation Questions (Option 4) Grill Repair (Option 5) Service Technician (Account No. Required)	
Parts Department M-F 8:30am-5:30pm EST	Parts Questions	800-599-7569 (Option 2)	706-228-6539
Product Specialist (DDPS)* M-F 8am-5pm EST	Product Exchange	800-456-4669 (Option 5)	706-228-6555
Technical Information Department (TID) M-F 8 am-6pm EST	Wiring Diagram Technical Feedback Technical Specifications	888-842-3660 (Option 2) for Refrigerators, Freezers, Air Conditioners or Dehumidifiers (Option 3) for Cooking (Option 4) for Laundry or Dishwashers (Option 5) for Outdoor Grills	
Service Assistance Center (SAC) M-F 9am-5:30pm EST	Warranty Inquiries Claims Processing	866-646-6810 or E-Mail servicer.assistance@electrolux.com	706-228-6609
Service Contract M-F 9am-5:30pm EST NOTE: This Information Is Also Available By Logging Onto ServiceBench.com	Contract Status, Number, Type Model/Serial Number Expiration Date Full Coverage OR Deductible	706-860-4110	706-651-7735

* Please, listen to all menu options as they have recently changed.

Region Service Quality Managers Information



REGION 1 NORTHEAST

JIM RUEDIGER
863 Pennsylvania Avenue
Lemoyne, PA 17043
james.ruediger@electrolux.com

REGION 2 MID-ATLANTIC

MARSHALL HOLDER
1011 Blackstock Road
Pauline, SC 29374
marshall.holder@electrolux.com

REGION 3 SOUTH REGION

KEN HALL
65 Ashton Drive
Covington, GA 30016
ken.hall@electrolux.com

REGION 4 FLORIDA

MARK POLLITZ
226 N. Nova Road, PMB 392
Ormond Beach, FL 32174
mark.pollitz@electrolux.com

REGION 5 GREAT LAKES

DINO NEOKRATIS
25 Hilltop Lane
South Elgin, IL 60177
dino.neokratis@electrolux.com

REGION 6 SOUTH CENTRAL

BUD HAAS
2236 Brigadoon Court
Arlington, TX 76013
bud.haas@electrolux.com

REGION 7 NORTH CENTRAL

SCOTT HARDER
207 S. West Street
Ft. Branch, IN 47648
scott.harder@electrolux.com

REGION 8 NORTH WEST

DANNY DAILEY
250 Bobby Jones Expressway
Augusta, GA 30907
danny.w.dailey@electrolux.com

REGION 9 SOUTH WEST

ROSS MOBBLEY
3069 Alamo Drive, #502
Vacaville, CA 95687
ross.mobbley@electrolux.com

Commercial Contact Information

Frigidaire Commercial Products

Refrigeration Products

Refrigerators - Glass Door

FCGM201RF

Refrigerators - Solid Door

FCRS201RF

FCRS201LF

Upright Freezers

FCFS201LF

Chest Freezers

FCCS201F

FCCS151F

FCCS071F

Ice Cream Display Cases

FCCG201F

FCCG151F

FCCG071F

Laundry Products

Coin-Operated Washers

FCCW3000E

Coin-Operated Electric Dyers

FCED3000E

Coin-Operated Gas Dryers

FCGD3000E

Contact Frigidaire Commercial

For Commercial Products Listed Here Only

Customer Service Center - U.S.A.

1 (866) 738-1640

Monday - Friday

8:00 am - 6:00 pm EST

Technical Support Center - U.S.A.

1 (866) 738-1641

Monday - Friday

8:00 am - 6:00 pm EST

Order Genuine Frigidaire Parts

1 (866) 738-1640

Monday - Friday

8:30 am - 6:00 pm EST

Mailing Address

Electrolux Major Appliances North America

Frigidaire Commercial Division

P.O. Box 212378

Martinez, GA 30917

E-mail

frigidaire.commercial@electrolux.com

Not for Domestic Commercial Rated Freezers

Web Site

www.frigidairecommercial.com

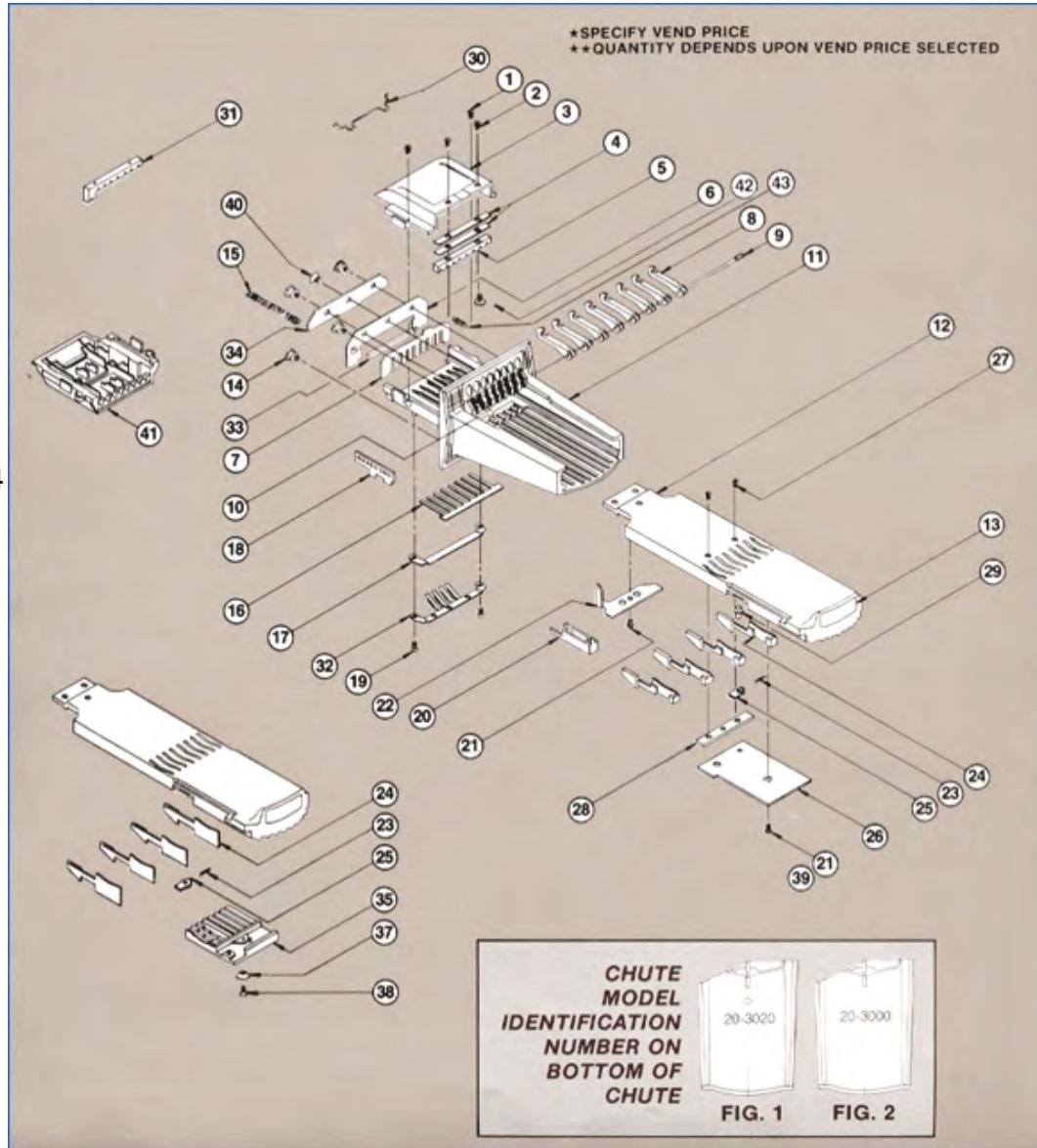
Commercial Warranty

Commercial products hold a 1-year **PART** warranty ONLY and hold **NO LABOR warranty**.

GREENWALD V8 COIN CHUTE

Parts Breakdown

- 1) SCREW (METRIC) 2 00-9724
- 2) SCREW (METRIC) 2 00-7938
- 3) TOP HOUSING 1 20-3019
- 4) SHIM 2 20-2042
- 5) COIN SIZING BLOCK 1 20-3006
- 6) GATE COVER 1 20-2043
- 7) GATE 1 20-2035
- 8) SLIDE STOP DOG 8 20-2011
- 9) DOG SHAFT 1 20-4004
- 10) DECAL, CASTING 1 00-9905
- 11) BODY CASTING 1 20-3020
- 12) COIN SLIDE 1 20-3021
- 13) DECAL, SLIDE 1 00-9104
- 14) CHUTE LOCATING SCREW 4 00-7483
- 15) SLIDE RETURN SPRING 1 00-8148
- 16) SPRING 1 20-2040
- 17) SPRING PROTECTOR 1 20-2038
- 18) RACK 1 20-2023
- 19) SCREW (METRIC) 2 00-7931
- 20) 10¢ INSERT varies 20-3023
- 21) SCREW (METRIC) 2 00-7923
- 22) SLIDE STOP 1 20-2039
- 23) RATCHET DOG SPRING 1 00-8123
- 24) BLOCKOUT KEY varies 20-5002
- 25) SLIDE RATCHET DOG 1 20-2041
- 26) SCREW (METRIC) 2 00-7935
- 27) BUFFER 1 20-2034
- 28) RATCHET DOG POST 1 20-4005
- 29) COIN RETAINER optional 00-8168
- 30) COIN SIZING BLOCK varies 20-3007
- 31) 5¢ INSERT varies 27-5011
- 32) 10¢ INSERT varies 20-3023
- 33) COIN SIZING BLOCK (5¢) varies 27-3008
- 34) COIN SIZING BLOCK (10¢) varies 27-3007
- 35) COIN SIZING BLOCK (5¢ x 10¢) varies 27-3009
- 36) COIN SIZING BLOCK (10¢ x 10¢) varies 27-3010
- 37) SCREW (METRIC) varies 00-7936
- 38) SIZING PLATE HOUSING
- 39) SIZING PLATE (25¢)
- 40) SIZING PLATE (\$1.00)
- 41) INSERT (25¢)
- 42) MAGNET optional 00-9255
- 43) PRESSURE SPRING ASSEMBLY optional 27-1016
- 44) SCREW optional 00-7541
- 45) TOP HOUSING ASSEMBLY (U.S.) optional 27-1027-1
- 46) TOP HOUSING ASSEMBLY (Canada 0-\$2.75)
- 47) SPRING 20-3020 20-3000



CHANGING THE PRICE OF A V8 COIN CHUTE ID# 20-3000

1. To Change 25¢ Pricing
 - a. Remove slide return spring (#15).
 - b. Remove slide stop (#22).
 - c. Remove slide (#12) from chute.
 - d. Turn slide upside down and remove screw (#38). DO NOT REMOVE COIN RECEIVER BLOCK.
 - e. Turn slide and block right side up and lay on a flat surface.
 - f. Lift slide clear of block and set aside.
 - g. To change prices, add or remove blockout keys (#24) or inserts (#20).
 - h. Replace coin receiver block into slide and reinstall into coin chute.
 - i. Install appropriate price decals (#10 & #13).
2. To Change 10¢ Pricing
 - a. Remove top housing (#3).
 - b. Install correct coin sizing block (#31) or (#36).
 - c. Reinstall top housing and return spring.
 - d. Install appropriate price decals (#10 & #13).

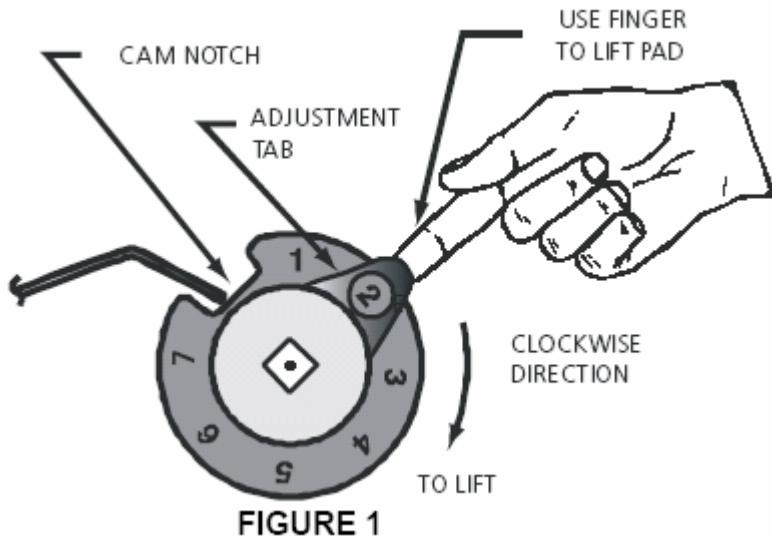
CHANGING THE PRICE OF A V8 COIN CHUTE ID# 20-3020

1. To Change 25¢ Pricing
 - a. Remove slide return spring (#15).
 - b. Place coin(s) in coin slot(s) and push slide all the way forward.
 - c. Remove buffer (#28).
 - d. Turn coin chute upside down and install or remove the required number of blockout keys (#24). Remove keys to increase vend, add keys to lower vend.
 - e. Reassemble buffer.
 - f. Pull slide back to original position and reassemble slide return spring.
 - g. Install appropriate price decals (#10 & #13).
2. To Change 10¢ Pricing
 - a. Remove slide return spring (#15).
 - b. Place coin(s) in coin slot(s) and push slide all the way forward.
 - c. Remove buffer (#28).
 - d. Turn coin chute upside down. Install or remove required number of blockout keys (#24). Install or remove 10¢ insert (#20) into left hand slot of slide (right hand slot with slide turned upside down).
 - e. Reassemble buffer and pull slide back.
 - f. Remove top housing (#3).
 - g. Remove two screws (#2) and coin sizing block (#5). Install 10¢ coin sizing block (#31).
 - h. Reassemble top housing and return spring.
 - i. Install appropriate price decals (#10 & #13).

Series 7682 "Quick-Change" Start Mechanism

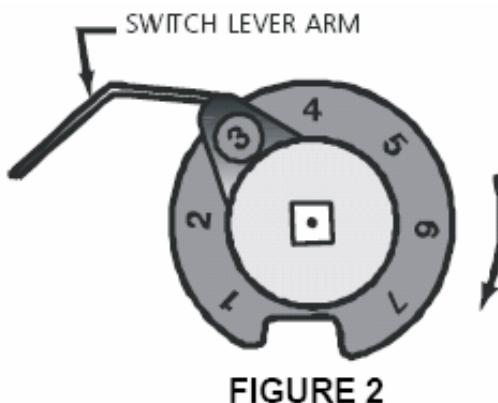
INSTRUCTIONS TO CHANGE THE NUMBER OF COIN SLIDE INSERTIONS TO START APPLIANCE

1. Disconnect power from machine.
2. Turn Shaft & Cam Assembly in a clockwise direction until switch lever arm drops into cam notch (Fig. 1).



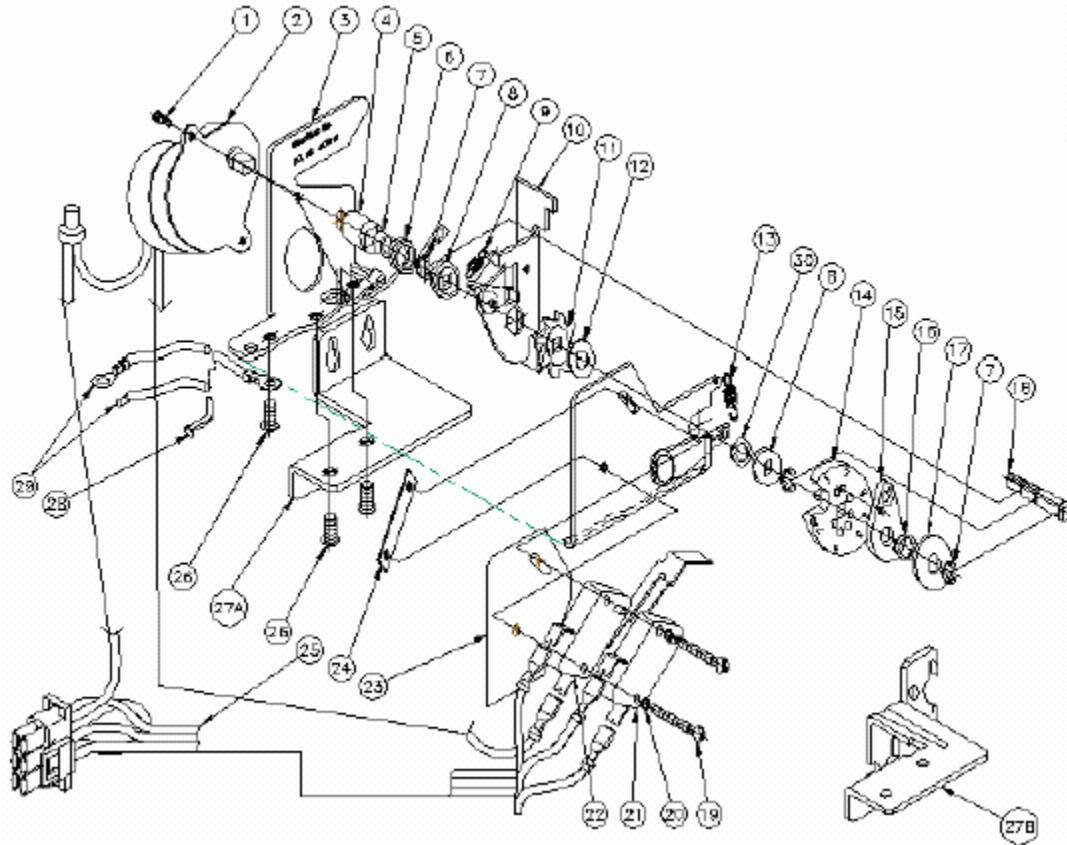
EXAMPLE: To change from \$1 to \$2 move tab from # 1 to # 2

3. Lift Adjusting Tab away from cam with finger and turn Tab to desired number. Make sure Tab\ locks into place in new position.
4. Turn Shaft & Cam Assembly in a clockwise direction until switch lever arm is on top of Tab to assure that both mechanism switches are open (Fig. 2).



5. Reconnect power to machine.

Parts List for Series 7682 "Quick-Change" Start Mechanism



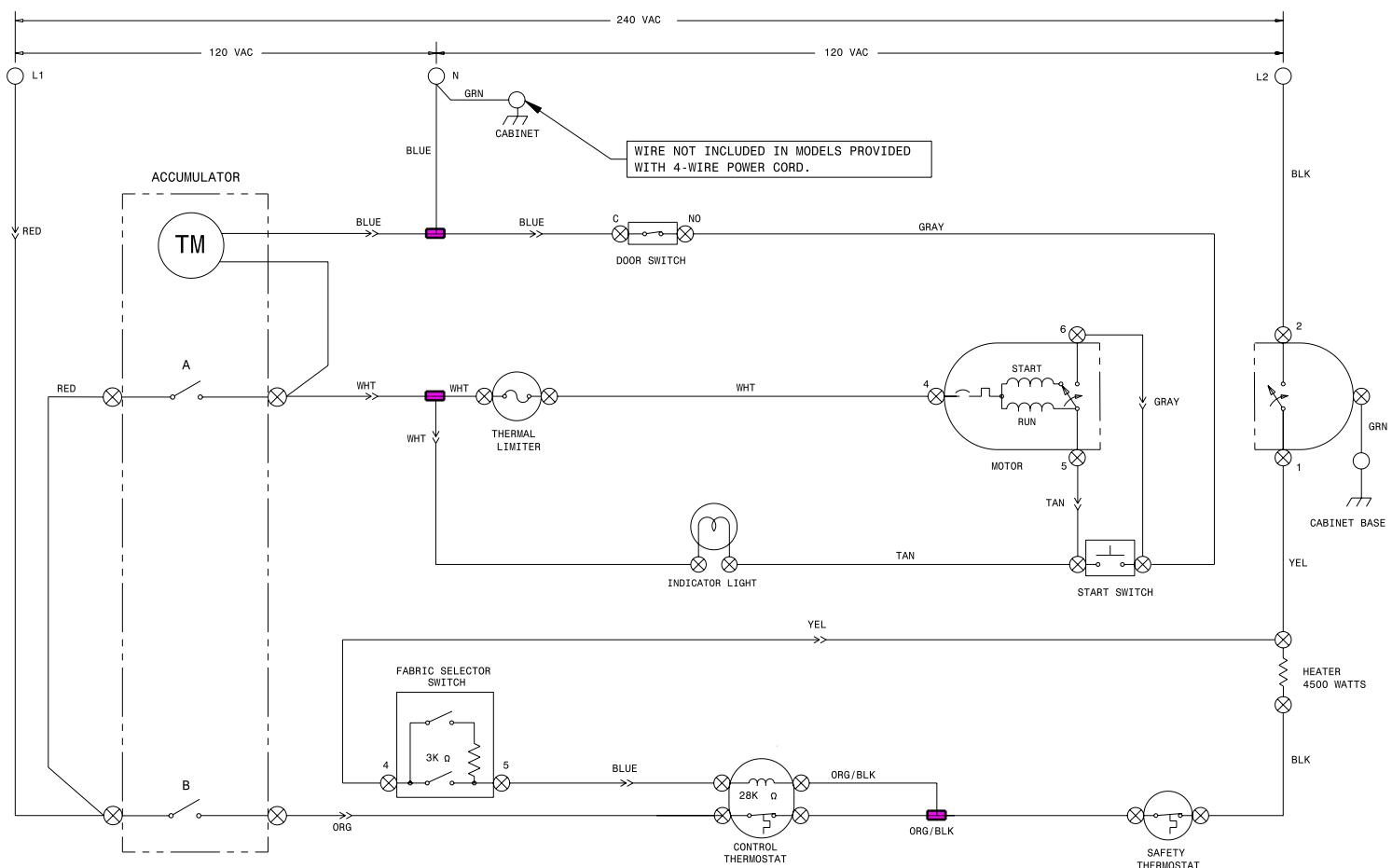
ITEM REQ'D PART NO DESCRIPTION

- 1) (2) 00-7185 #4-40 SELF-TAPPING SCREW
- 2) (1) 76-6009-* TIMER MOTOR ASS'Y
- 3) (1) 76-1037 SWITCH & BRACKET SUB-ASS'Y
- 4) (1) 76-5014 DRIVE SELEEVE
- 5) (1) 76-2033 SLEEVE
- 6) (1) 00-8149 TORSION SPRING
- 7) (3) 00-7070 RETAINING RING
- 8) (2) 76-5013 DRIVE BUSHING
- 9) (1) 00-8003 SPRING
- 10) (1) 76-1036 RACTHET ARM & PAWL ASS'Y
- 11) (1) 76-5017 RACHET WHEEL
- 12) (1) 76-2003 WASHER
- 13) (1) 59-204 SPRING
- 14) (1) 76-5012 CAM
- 15) (1) 76-5010 ADJUSTER TAB

ITEM REQ'D PART NO DESCRIPTION

- 16) (1) 00-7055 SPRING WASHER
- 17) (1) 00-7047 WASHER
- 18) (1) 76-2026 DRIVE SHAFT
- 19) (2) 00-7458 #4-40 3/16 PAN HD SCREW
- 20) (2) 00-7097 #4 SPLIT LOCKWASHER
- 21) (1) 00-6189 SNAP SWITCH
- 22) (1) 00-6190 SNAP SW. & LEVER ARM ASS'Y
- 23) (1) 76-5009 SWITCH INSULATOR
- 24) (1) 76-2035 NUT PLATE
- 25) (1) 76-6000 WIRE HARNESS ASS'Y
- 26) (2) 02-0810-00 #8-32x5/16 SEMS SCREW
- 27A) (1) 76-2059 MOUNTING BRACKET
- 27B) (1) 76-2027 MOUNTING BRACKET
- 28) (1) 59-0314 CABLE TIE
- 29) (1) 58-172-* GROUND WIRE
- 30) (1) 00-7558 WASHER

!CAUTION: DISCONNECT ELECTRIC CURRENT BEFORE SERVICING. LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION. VERIFY PROPER OPERATION AFTER SERVICING.



WIRING CODES	
⊗	QUICK DISCONNECT TERMINAL
—	CONNECTION
+	NO CONNECTION
—	MOTOR SWITCH
—	SPLICE
—	MOTOR PROTECTOR
—	CHASSIS (CABINET) GROUND
○	SCREW TERMINAL
→→	HARNESS CONNECTOR TERMINAL
☒	INSULATED TERMINAL

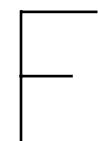
FABRIC SELECTOR SWITCH	
FUNCTION	RESISTANCE Ω
HIGH	∞
MEDIUM	3K $\pm 5\%$
LOW	10 MAX

- NOTES:**
1. ALL WIRING MUST CONFORM TO LOCAL ELECTRICAL CODES.
 2. CONNECT DRYER TO A 30 AMP INDIVIDUAL BRANCH CIRCUIT.
 3. SHOWN IN OFF POSITION, DOOR SWITCH CLOSED, MOTOR AT REST, THERMOSTAT CLOSED AND FABRIC SELECTOR SWITCH AT REGULAR.

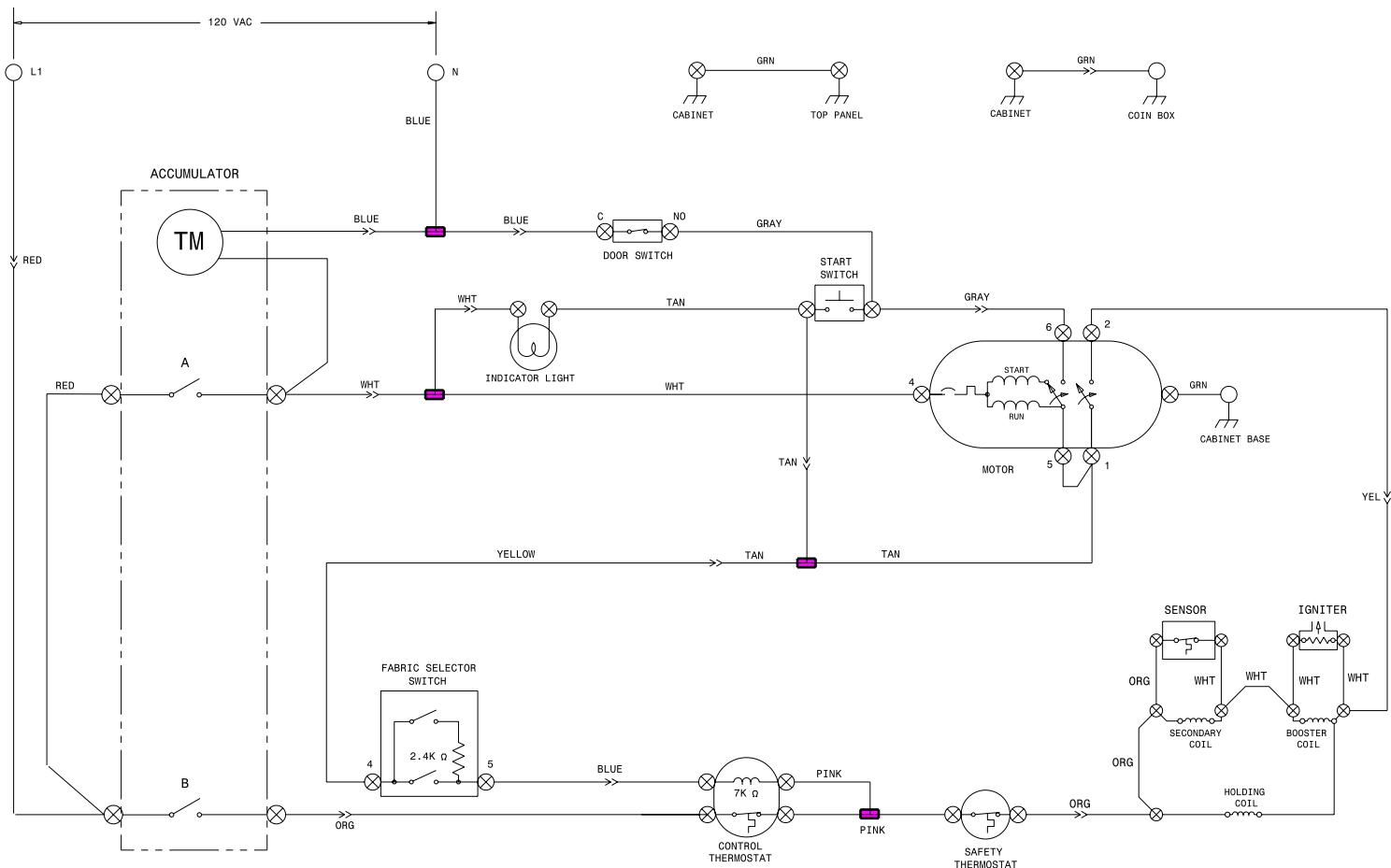


1 ACCUMULATION

DRIVE MOTOR			
HEATER			



!CAUTION: DISCONNECT ELECTRIC CURRENT BEFORE SERVICING. LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION. VERIFY PROPER OPERATION AFTER SERVICING.

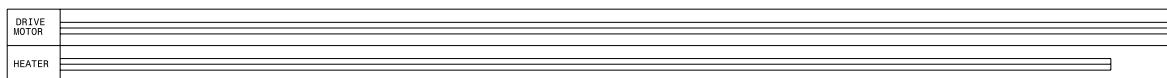


WIRING CODES	
⊗	QUICK DISCONNECT TERMINAL CONNECTION
+	NO CONNECTION
↔	MOTOR SWITCH
■	SPLICING
—	MOTOR PROTECTOR
○	CHASSIS (CABINET) GROUND
○	SCREW TERMINAL
→	HARNESS CONNECTOR TERMINAL
☒	INSULATED TERMINAL

FABRIC SELECTOR SWITCH	
FUNCTION	RESISTANCE Ω
HIGH	∞
MEDIUM	2.4K ±5%
LOW	10 MAX

- NOTES:
1. ALL WIRING MUST CONFORM TO LOCAL ELECTRICAL CODES.
 2. CONNECT DRYER TO A 15 AMP INDIVIDUAL BRANCH CIRCUIT.
 3. SHOWN IN OFF POSITION, DOOR SWITCH CLOSED, MOTOR AT REST, THERMOSTAT CLOSED AND FABRIC SELECTOR SWITCH AT REGULAR.

1 ACCUMULATION



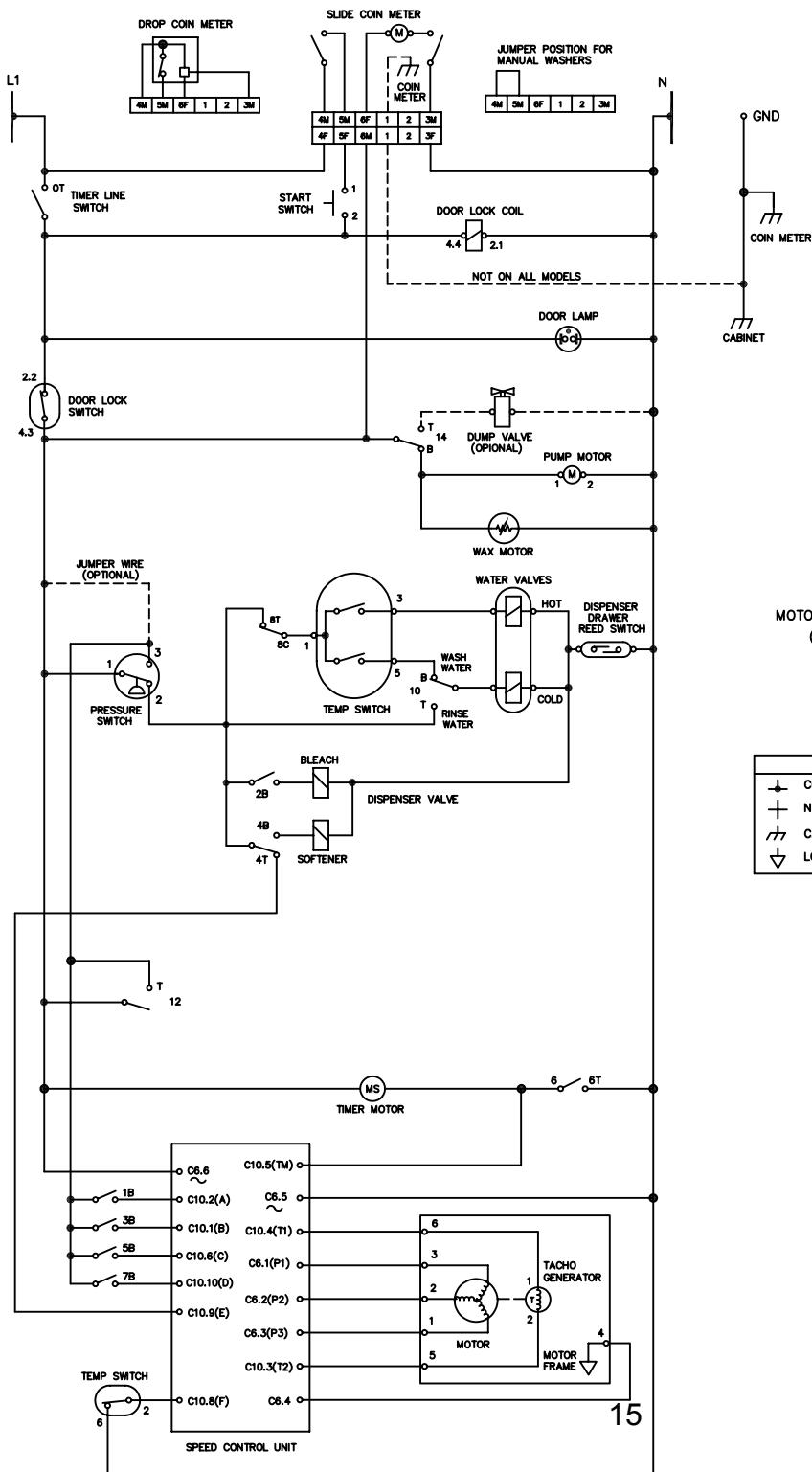
G

CIRCUIT	NO.	TERMINAL	ACTIVE	FIXED	CONTACT
MACHINE POWER	0	2	1		
CODE A	1	23	22	Y	
SOLENOID 2	2	5	4	Y	
CODE B	3	23	18	Y	
CODE E SOLENOID 1	4	5	7	Y	
CODE C	5	23	18	Y	
TM DIRECT	6	11	10	Y	
CODE D	7	23	18	Y	
WASH WATER	8	14	5	Y	
RINSE WATER WATER VALVE	10	17	16	Y	
PRESSURE BYPASS	12	20	25	Y	
DUMP VALVE DRAIN PUMP	14	20	25	Y	

EVENT TIME (MINUTES) * * 1.8 * * 2 * 3.0 1.0 * * * 2.0 * * 1.8 * * * 2.5 * * * 2.5 * * * 3.0 * * * 3.5 * * * 4.0 * * * 4.5 7.7 2.5

INTERVAL NO. 1 5 10 15 20 25 30 35 40 45

INTERVAL TIME = 30 SECONDS
Y = DETENT

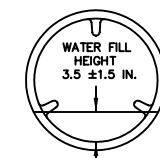


COMPONENT RESISTANCE TABLE	
ELECTRICAL COMPONENT	RESISTANCE Ω @ 77° F
WATER VALVE SOLENOIDS	880 ±10%
DOOR LOCK SOLENOID	380 ±10%
TIMER MOTOR	2425 ±6%
PUMP MOTOR	15 ±7%
DISPENSER VALVE SOLENOIDS	1100 ±7%
M1 TO M2	2.6 ±7%
M2 TO M3	2.6 ±7%
M1 TO M3	2.6 ±7%
M5 TO M6	184 ±7%

TEMPERATURE SWITCH	
CIRCUIT	
WASH	1-3 1-5 2-6
COLD	X
WARM	X X X
DELIC	X X X
HOT	X

MOTOR PLUG-MALE (END VIEW)

WIRING CODES	
— CONNECTION	
+ NO CONNECTION	
— CABINET GROUND	
▽ LOCAL GROUND	



NO LOAD, START POSITION OF PERMANENT PRESS

WHITE SIDE	
1	23 24
3	1 21
5	6 15
7	TM 9 17
9	11 10
11	14 13
13	18 17
15	20 19

BLACK SIDE	
1	2 1
3	6 15
5	TM 9 17
7	11 10
9	14 13
11	18 17
13	20 19
15	24 14

TIMER PLUG-MALE (END VIEW)

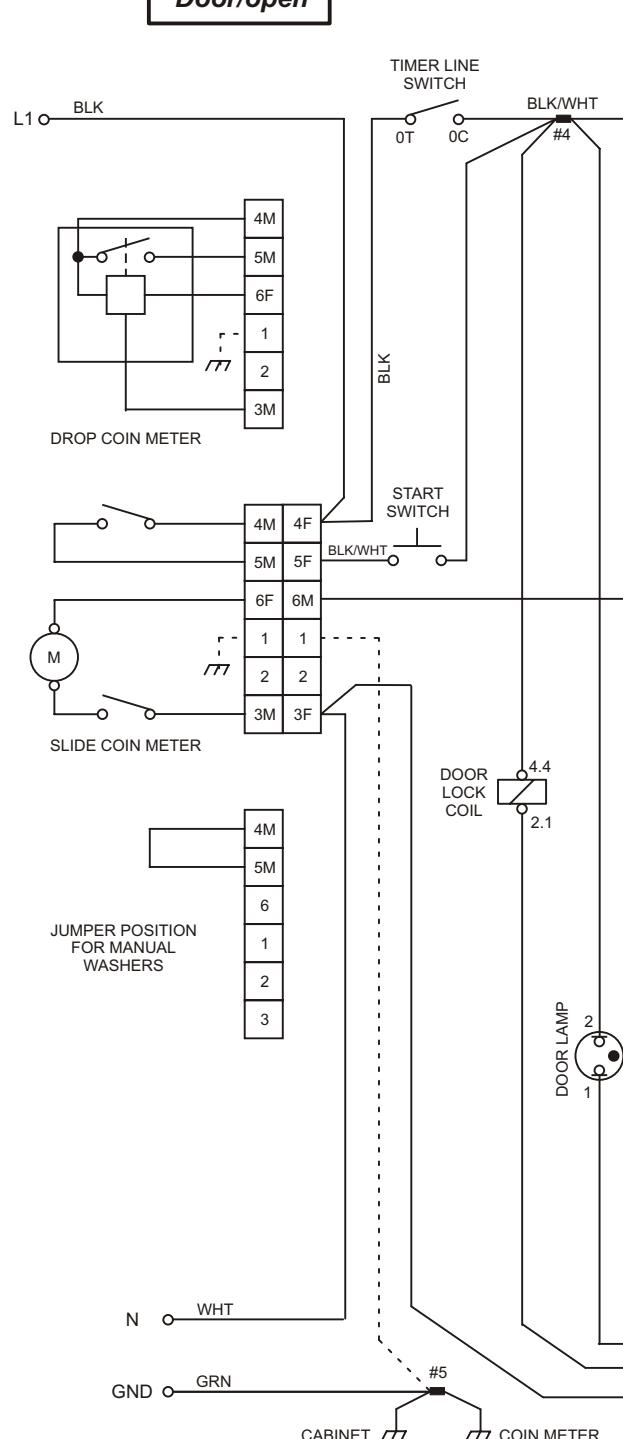
WARNING TO REDUCE THE RISK OF ELECTRICAL SHOCK DISCONNECT THIS APPLIANCE FROM THE POWER SUPPLY BEFORE ATTEMPTING ANY USER MAINTENANCE. TURNING THE CONTROLS TO THE OFF POSITION DOES NOT DISCONNECT THIS APPLIANCE FROM THE POWER SUPPLY.

TECH SHEET - RETAIN FOR SERVICE TECHNICIAN

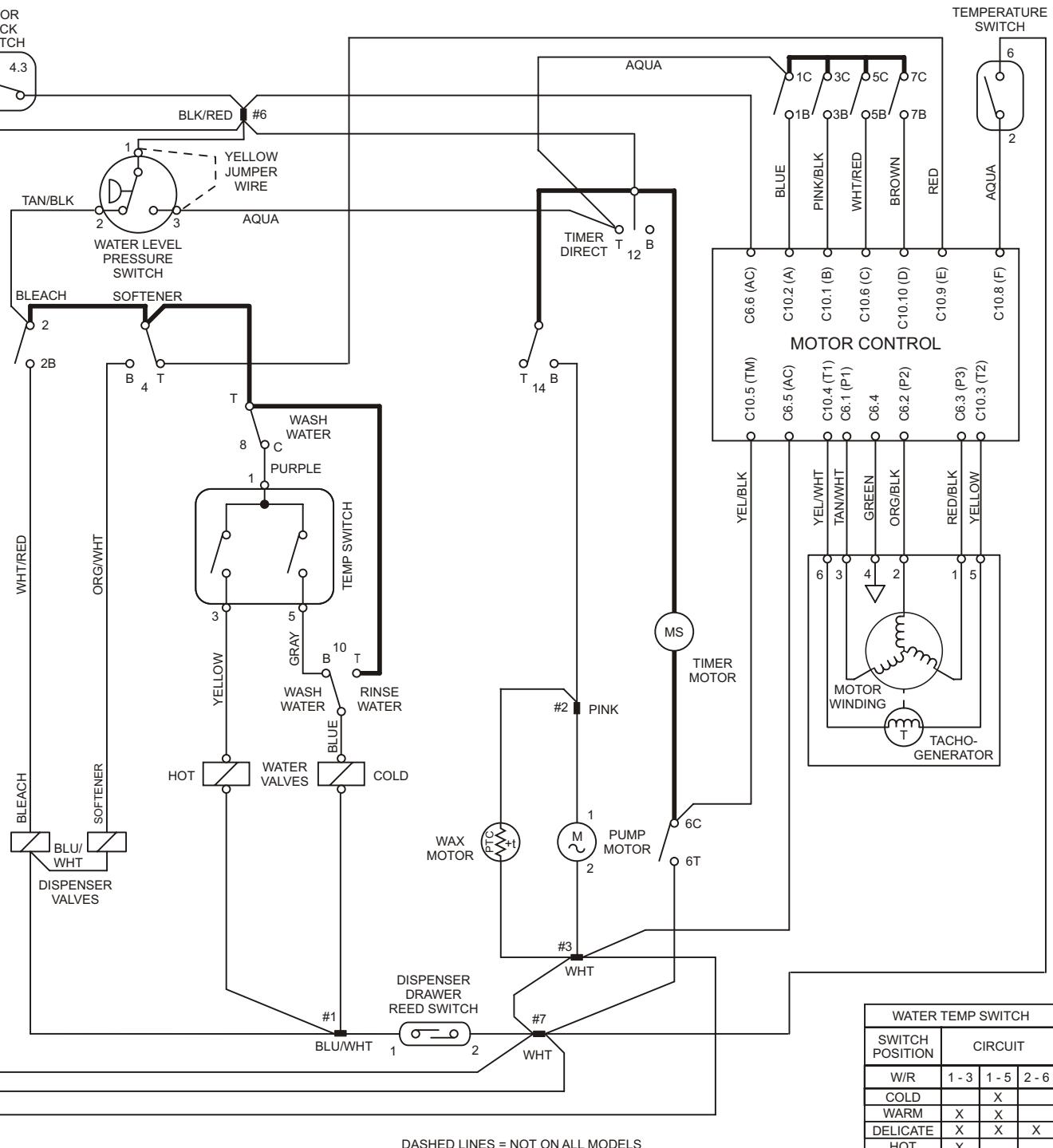
! WARNING

Disconnect from Electrical Supply Before Servicing Washer.

Timer/off Door/open

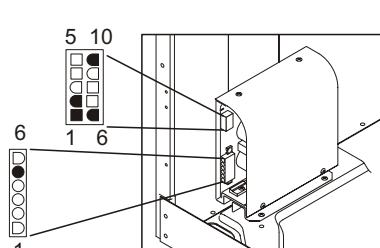


WIRING DIAGRAM

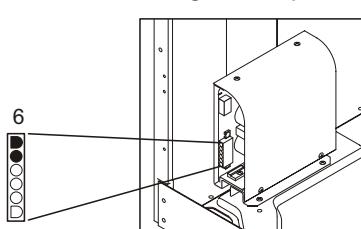


Motor Will Not Run

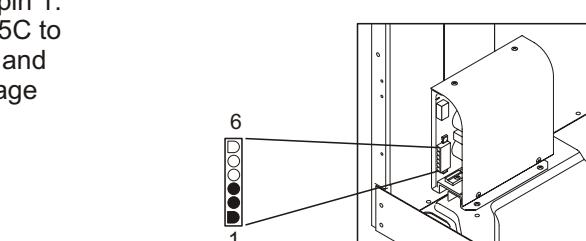
- CHECK FOR POWER:** Advance the timer knob to the drain increment. If the drain pump does not run, check household safety circuit. If the drain pump runs go to step 2.
- CHECK FOR MOTOR MOVEMENT:** Turn the water off to the washer. Remove electrical power from the washer and remove the back panel. Remove the motor drive belt. Reconnect electrical power and set the timer to the start of the Regular wash cycle and pull the knob out. If motor does not rotate, check for a poor connection in the timer line switch, coin box circuit, or door lock switch. If good, and motor does not run go to Step 3.
- MEASURE VOLTAGES:** Remove the six pin plug from the speed control unit. Measure the voltage between pins 5 and 6 on the harness. If the meter reads 0 check the connection in the timer line switch or door lock. If the meter reads 120 Vac go to step 4.
- Set the timer to the Heavy Wash position of the Regular wash cycle. Remove the ten pin plug from the speed control unit. Measure the voltage between pins 1, 2, 6 and 10 of the ten pin plug to pin 5 of the 6 pin plug on the harness. The voltage at pins 2, 6, and 10 should read 120 Vac and 0 Vac at pin 1. If not, check timer contacts 1C to 1B, 5C to 5B, and 7C to 7B for closed contacts, and 3C to 3B for open contacts. If the voltage readings are correct, go to step 5.**
- Remove electrical power from the washer. With an ohmmeter check the resistance between pins 1 and 2, 2 and 3, and 3 and 1 of the six pin plug on the harness. If the meter reads other than 2.6 ohms ± 7%, replace the motor.**



Speed Control



Speed Control



Speed Control

Quick Facts

- The timer motor will not run continuously. The speed control unit controls the timer motor and advances the timer when needed.
- In some tumble modes, the tub may not tumble for the first 16 to 20 seconds after start-up.
- Extremely low water pressure may cause tub rotation to stop until WLC satisfied.

IMPORTANT

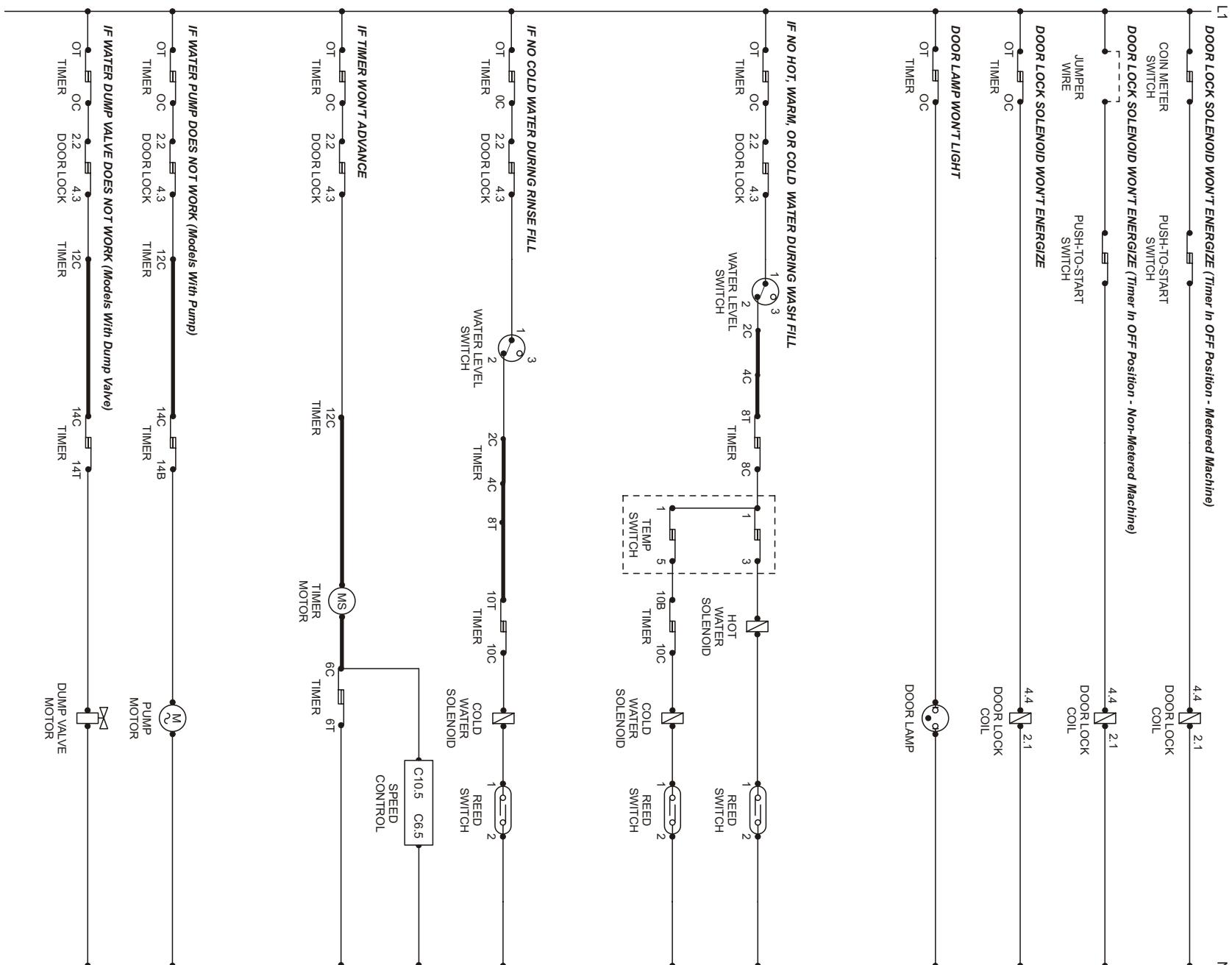
If grounding wires, screws or clips used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened. Certain internal parts are intentionally NOT grounded and may present a risk of electric shock only during servicing. Do not contact the following parts while the appliance is energized: pump, drive motor and electronic control boards.

IMPORTANT SAFETY NOTICE

This information is intended for use by technicians possessing adequate background of electrical, electronic and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

!WARNING

This information is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. The seller or manufacturer cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this data.

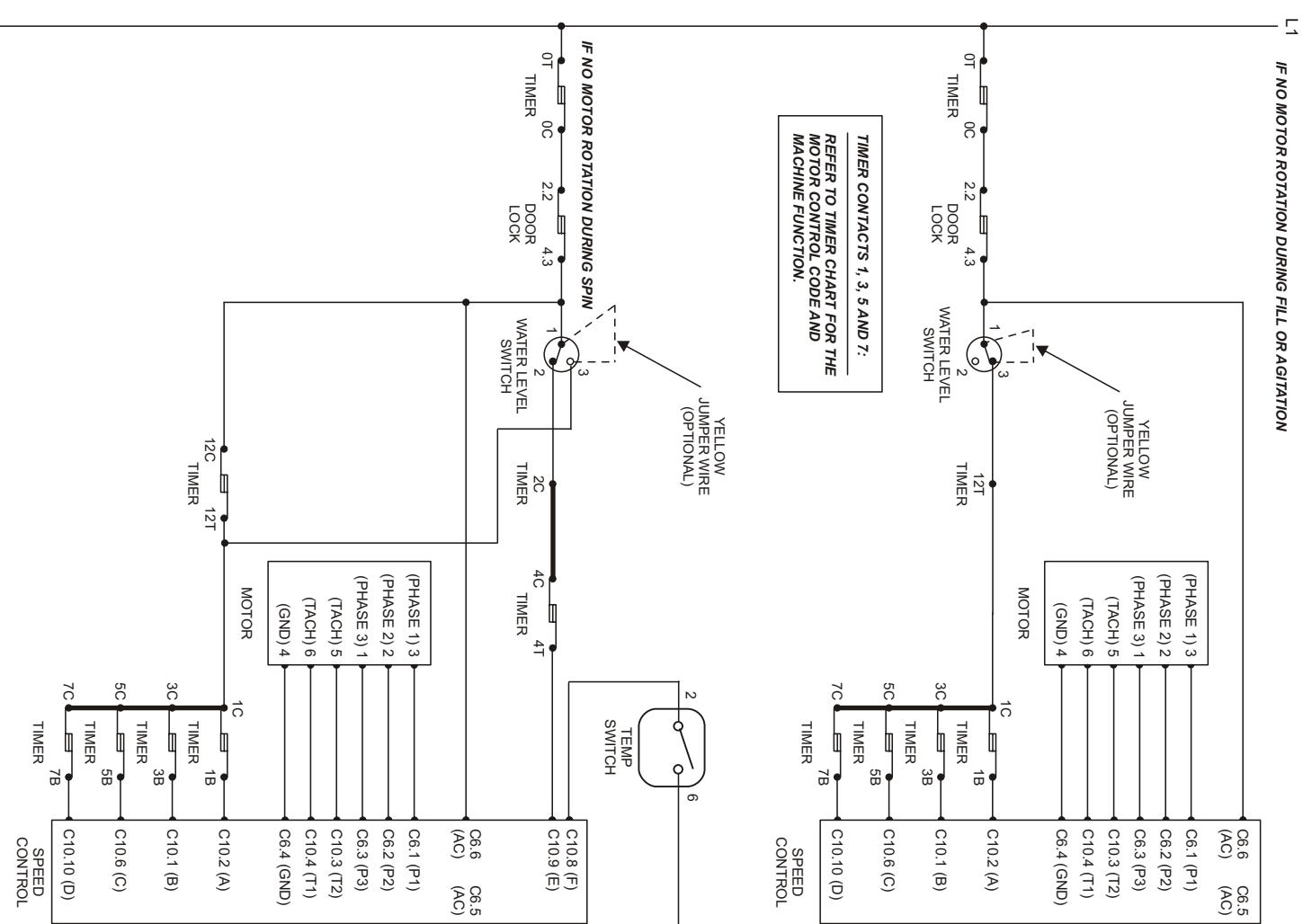


NOTE: BOLD LINES INDICATE INTERNAL TIMER CIRCUITS.

IMPORTANT

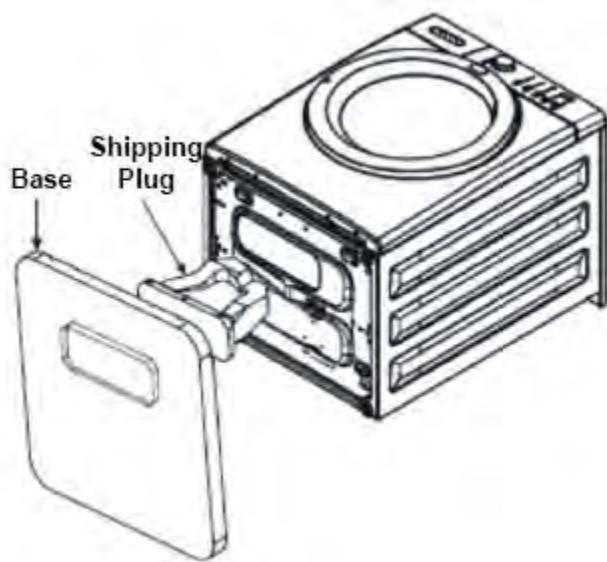
Reconnect all grounding devices, all parts of this appliance capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

DIAGNOSTIC STRIP CIRCUITS



Changes to the Front Load Washer

1. The lower front panel has been removed on the ATF6000 & ATF7000.
2. Shipping plug is now removed on the ATF6000, ATF7000, GLTF2940 and FTF2140 by lifting the unit off the Styrofoam shipping base allowing the shipping plug to come out of the bottom.



3. Reed Switch in dispenser has been removed.
4. Schematics on the ATF6000 & ATF7000 are located on top of the dispenser once the top panel is removed.
5. 12 volt A/C 5 watt bulb added to the ATF7000

Vibration on 3.5 ft³ Next Generation Front Load Washer

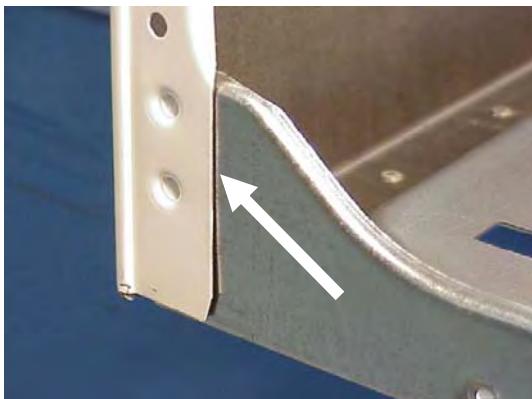
1. A minor software change occurred for spin ramp up after serial number XC525
 - a. Frigidaire Good models (non digital display) - PN 134484018 (subs to 134732918 when available)
 - b. Frigidaire Better models (digital display) - PN 134523103 (subs to 134732003 when available)
2. Dual stage shocks - PN 134564200 – If the serial number of the washer is prior to XC536, install shock kit.



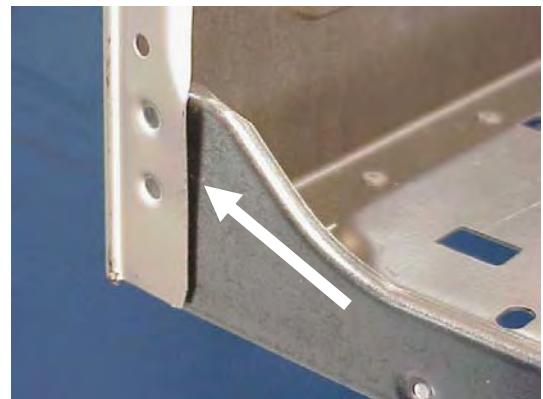
3. Install Rear Panel Kit (p/n 134682000) onto the rear of the pedestal. This will reduce the displacement and help move critical frequencies away from normal operating speeds. (See May-June 2006 Service Bulletin)
4. Service bellows without convolutions - PN 134515300 - If the serial number of the washer is prior to XC617, install new bellows.
5. Major software change for spin ramp up and brake down on motor control Board # 134743500

6. Improper clinching of the base to the side panel. If there is a gap between the front part of the side panel or if the base flange can be moved independent to the side panel.

Good



Bad



SOLUTION:

1. Using a pliers or vice grip, squeeze the base and side panel together to mate the clinches.
2. Using a 1/8" drill bit, drill a hole (into each side panel if needed) as shown below.



3. Insert bolts into the holes and secure with lock washers and nuts. Tighten securely.



Accessing Diagnostic Mode

- A. Turn the **Program Knob** to the start position, **Spin Only**.
 - B. Press **Start/Pause** to start the cycle and save it.
 - C. Press **Cancel** to stop the cycle and turn off the LEDs.
 - D. Press **Cancel** again to turn on the LEDs.
 - E. Within 5 seconds, press and hold **simultaneously** the **Options** and **Start/Pause** buttons until LEDs start flashing, then release buttons.
1. All the LEDs will sequentially light. Pressing a button below a light cluster will light all the LEDs in that cluster at one time to confirm functionality.
 2. Turn the program knob (1) click clockwise from the start position. The hot water solenoid will activate and hot water should enter through the detergent compartment.
 3. Turn the program knob (2) clicks from the start position. The bleach water solenoid will activate and cold water should enter through the bleach compartment.
 4. Turn the program knob (3) clicks from the start position. The bleach and the wash water solenoids will activate and cold water should enter through the softener compartment.
 5. Turn the program knob (4) clicks from the start position. The door lock solenoid will deactivate and the loading door can be opened. When the door is opened, the drum light should turn on.
 6. Turn the program knob (5) clicks from the start position. The washer will fill and tumble. Once tumbling has started, the Boost Heater (if so equipped) will turn on.
Note: if the washer is not hooked up to water it may take up to a minute to tumble.
 7. Turn the program knob (6) clicks from the start position. The drain pump & door lock solenoid will activate and the washer will operate in high spin.
 8. Turn the program knob (7) clicks from the start position. The control will signal the last error code.

Exiting Diagnostic Mode

Unplug the power cord, wait 5-8 seconds, then reconnect the power cord **OR**
Turn the program knob clockwise 2 or 3 clicks after the Start Position. Press **Options** and **Start/Pause** buttons together for a few seconds until wash cycle LEDs appear.

Reading Error Codes

1. Wake the washer by pressing any button.
2. Wait 5 seconds.
3. Press and **HOLD** the **Start/Pause** and **Cancel** buttons simultaneously.

As long as the buttons are held, the failure code will appear in the display as an **E** followed by two numbers, a number and a letter or two letters. The control will beep and the **Door Lock**, **Wash**, **Rinse**, and **Final Spin** indicator lights will flash.

Error Codes

- E11** - Fill time too long. Refer to test (1).
- E13** - Water leak in tub or air leak in air bell. Refer to test (2).
- E21** - Water not pumping out fast enough. Refer to test (3).
- E23** - Drain pump relay on control board failed or wire off pump.
Replace control board or wire.
- E24** - Drain pump relay on control board failed or wire off pump.
Replace control board or wire.
- E31** - Pressure sensor not communicating with control board. Refer to test (4).
- E35** - Pressure sensor indicates water overfill. Refer to test (5).
- E36** - Control board problem. Replace the control board.
- E41** - Control board thinks the door switch is open. Refer to test (6).
- E43** - Control board problem. Replace the control board.
- E44** - Control board problem. Replace the control board.
- E45** - Control board problem. Replace the control board.
- E46** - Control board problem. Replace the control board.
- E47** - Board thinks the door PTC circuit is open in spin. Refer to test (7).
- E48** - Board thinks the door PTC circuit is closed. Refer to test (7).
- E52** - Bad signal from tacho generator. Refer to test (8).
- E56** - High motor current. Refer to test (9).
- E57** - High current on inverter. Refer to test (9).
- E58** - High current on motor phase. Refer to test (9).
- E59** - No tacho signal for 3 seconds. Refer to test (10).
- E5A** - High temperature on heat sink caused by overloading. Test first, if bad-replace speed control board.
- E5B** - High temperature on heat sink. Replace the speed control board.
- E5C** - High temperature on heat sink. Replace the speed control board.

E5D - Communication problem. Refer to test (11).

E5E - Communication problem. Refer to test (11).

E5F - Communication problem. Refer to test (11).

E66 - Heating element relay failure. Refer to test (14).

E67 - Input voltage on microprocessor incorrect. Refer to test (15).

E68 - Current leakage to ground on heater or fuse opened. Refer to test (14).

E70 - The control board is not seeing the correct water supply.

E71 - Wash NTC failure. (Tub heater) Replace control board or wire.

E74 - Wash temperature does not increase. Place NTC in correct position.

E75 - Water temperature sensor circuit. Refer to test (12).

E76 - NTC temperature for the cold water valve over the limits. Hot and cold-water hoses switched.

E82 - Console control problem. Replace the control board.

E83 - Console control problem. Replace the control board.

E91 - Communication error between UI board and control board. Check wiring.

E93 - Console control problem. Replace the control board.

E94 - Console control problem. Replace the control board.

E95 - Communication error. Replace the control board.

E97 - Console control problem. Replace the control board.

E98 - Console control problem. Replace the control board.

EB1 - Incoming power frequency out of limits. Refer to test (13)

EB2 - Incoming line voltage above 130 VAC. Check voltage at the outlet. If below 130 VAC, replace the control board.

EB3 - Incoming line voltage below 90 VAC. Check voltage at the outlet. If above 90 VAC, replace the control board.

EF1 - Clogged drain pump. Unclog the drain pump.

EF2 - Too much soap. Advise customer to reduce the amount of soap they are using.

E8E - Console control problem. Replace the control board.

E8F - Console control problem. Replace the control board.

E85 - NTC temperature for the hot water valve over the limits. Hot and cold water hoses switched.

Tests

Test 1

1. Is the incoming water flow normal?

Yes, Go to step (4)

No, go to step (2)

2. Are the incoming water faucets turned on?

Yes, Go to step (3)

No, Turn water faucets on

3. Is the incoming water pressure above (30) psi.

Yes, Check for kinked or blocked incoming water hoses, clean the incoming water screens. If problem still remains, replace the water inlet valve assembly.

No, Have customer correct pressure problem.

4. Does the fill water continue to enter the washer?

Yes, Go to step (5)

No, Go to step (6)

5. Remove power from the washer. Did the water fill stop?

Yes, Go to step (6),

No, Replace the inlet valve assembly.

6. Good models, check the pressure switch.

Pressure switch checks good. Go to step (8).

Pressure switch checks bad. Replace pressure switch.

7. Better models, replace the pressure sensor.

If this did not correct the problem, go to step 8.

8. Replace the control

Test 2

1. Is the washer leaking water?

Yes, Correct water leak.

No, Go to step (2)

2. Is there an air leak in the air bell system?

Yes, Correct the air leak problem.

No, Go to step (3-4)

3. Good models, check the pressure switch.

Defective, Replace the pressure switch.

Good, Go to step (5)

4. Better models, replace the pressure sensor.

If this did not correct the problem, go to step 5.

5. Replace the control board.

Test 3

1. Check the drain hose for restrictions.

Restriction, Correct problem.

No restriction, Go to step (2).

2. Start the washer and check for 120 VAC at the drain pump.

Zero, Replace the control board.

120 VAC, Remove the pump and check for blockage. If blocked, remove the restriction, if not, replace the pump.

Test 4

1. Inspect the wiring between the pressure sensor and the control board.

Defective wiring, Correct wiring.

Good wiring, Replace the pressure sensor.

If this **does not** correct the problem, replace the control board.

Test 5

1. Is the water level above 4.5 inches?

Yes, Go to step (2).

No, Go to step (4).

2. Does water enter the washer continuously?

Yes, Go to step (3).

No, Replace the control board.

3. Remove power from washer. Does the water stop coming in?

No, Replace water valve assembly.

Yes, Check wiring to valve assembly for shorts. If wiring is good, replace the control board.

4. Replace the pressure sensor switch. Did this correct the problem?

Yes, Problem solved.

No, Replace the control board.

Test 6

1. Is the loading door closed?

No, Close the door.

Yes, Go the step (2).

2. In the J2 plug on the control, measure voltage from the black wire to ground with power on.

0 volts, Check the door strike. If good, replace the door switch assembly.

120 volts. Replace the control board.

Test 7

1. Remove the door lock assembly and measure the resistance of the PTC.

Shorted or open. Defective door lock assembly.

Reads around 1500 Ohms. Defective control board.

Test 8

1. Disconnect the plug from the drive motor and measure the resistance pins 4 & 5 in the motor.

If the reading is between 105 & 130 Ohms, replace the speed control board.

If the meter reads outside 105 & 130 Ohms, replace the motor.

Test 9

1. Remove the belt from the motor and spin the motor pulley. Does the motor spin free?

No. Replace the motor.

Yes. Go to step (3)

2. Spin the tub pulley. Does the tub spin free?

No. Check the tub bearings.

Yes. Go to step (3)

3. Disconnect the plug from the motor and measure the resistance of the windings (pin 1 to pin 2, pin 1 to pin 3, pin 2 to pin 3). All readings should be between 4 and 6 Ohms.

If the readings are correct, replace the speed control board.

If the readings are incorrect, replace the motor.

Test 10

1. Remove the belt from the motor and spin the motor pulley. Does the motor spin free?

No, Replace the motor.

Yes, Go to step (3)

2. Spin the tub pulley. Does the tub spin free?

No, Check the tub bearings.

Yes, Go to step (3)

3. Disconnect the plug from the drive motor and measure the resistance between pins 4 & 5 in the motor.

If the meter reads outside 105 & 130 Ohms, replace the motor.

If the reading is between 105 & 130 Ohms, Go to step (4)

4. Disconnect the plug from the motor and measure the resistance of the windings (pin 1 to pin 2, pin 1 to pin 3, pin 2 to pin 3). All readings should be between 4 and 6 Ohms.

If the readings are correct, replace the speed control board.

If the readings are incorrect, replace the motor.

Test 11

1. Communication problem. Check the wiring between the control board and the speed control board.

Wiring bad, Correct wiring problem.

Wiring good, Replace the control board. If the problem is not corrected, replace the speed control board.

Test 12

1. Check the resistance of the NTC. Is it around 50K ohms?

No, Replace the water inlet valve assembly

Yes, Replace the control board.

Test 13

1. Have the power company check the frequency of the incoming power.

If correct, replace the control board.

Test 14

1. Check the resistance of the heating element. It should be approximately 14 ohms.
2. Check the resistance between ground and both heater terminals. It should be open when the heater terminals are disconnected.

If the readings are incorrect, replace the heating element.

Test 15

1. Check the resistance of the tub NTC. Is it around 4.8K ohms?

No, replace the heater assembly.

Yes, check the wiring.

Clearing Latest Stored Codes

Turn the **Program Knob** to the start position, **Spin Only**.

Press **Start/Pause** to start the cycle and save it.

Press **Cancel** to stop the cycle and turn off the LEDs.

Press **Cancel** again to turn on the LEDs.

Within 5 seconds, press and hold the **Option** and **Start/Pause** buttons until LEDs start flashing , then release buttons.

Turn the program knob clockwise 7 clicks from the Start Position. The control will signal the last error code.

Press and hold the **Options** and **Start/Pause** buttons for 3 seconds. The code will be cleared.

Customer codes

During normal operation, the display may show:

"cd" - cool down (Sanitary cycle)

"do" or **"dr"** - door problem

"Err" - an error has been detected

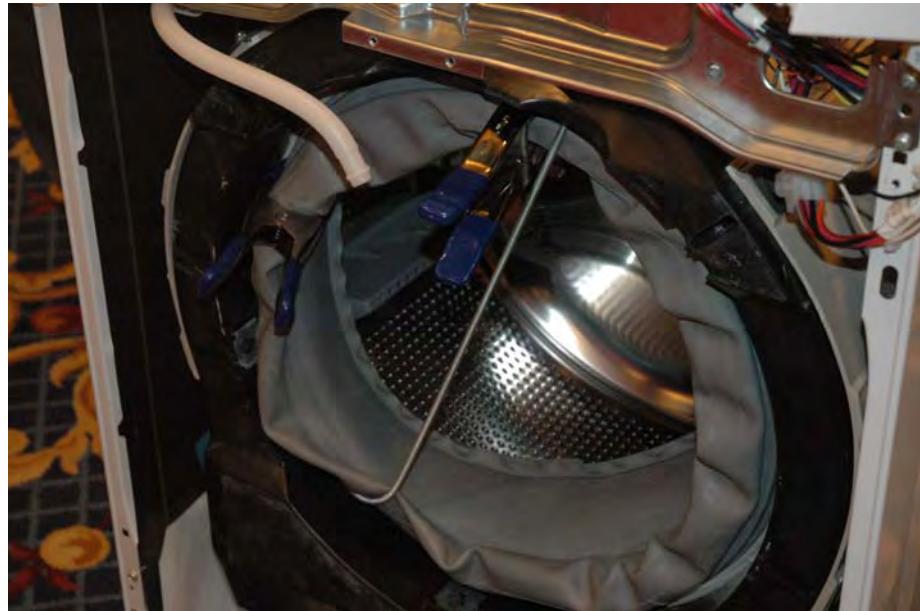
"LOC" - control lock is activated

"PAU" - cycle has been interrupted

Note Since the magnet has been removed from the dispenser drawer. o DDO code

Boot Replacement

Place the lubricated spring in the outer groove of the boot at the 12:00 position. The lubrication can be liquid soap, DO NOT USE OIL. Hold spring in place by wedging an object, about $\frac{3}{4}$ " in diameter between boot and counter weight or use a clamp to hold it in place. Pull spring taunt placing in the groove until the 3:00 or 9:00 position again wedging spring in place or using a clamp to hold it in place.



Keep pulling spring taunt around to the 6:00 position again wedging the spring in place or using a clamp to keep it in place, then continue pulling the spring placing it the groove all the way around until complete.



Affinity Dryer

Installation

Use only 4 inch (10.2 cm) diameter (minimum) rigid or flexible **metal** duct and approved vent hood which has a swing-out damper(s) that open when the dryer is in operation. When the dryer stops, the dampers automatically close to prevent drafts and the entrance of insects and rodents. To avoid restricting the outlet, maintain a minimum of 12 inches (30.5 cm) clearance between the vent hood and the ground or any other obstruction.

The following are specific requirements for proper and safe operation of your dryer. Failure to follow these instructions can create excessive drying times and fire hazards.

Do not use plastic flexible duct to exhaust the dryer.

Excessive lint can build up inside exhaust system and create a fire hazard and restrict air flow. Restricted air flow will increase dryer times. If your present system is made up of plastic duct or metal foil duct, **replace it with a rigid or flexible metal duct. Ensure the present duct is free of any lint prior to installing dryer duct.**

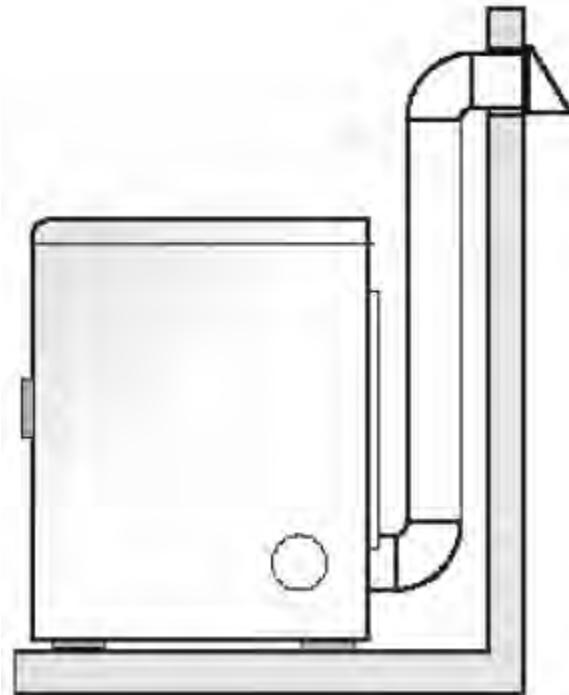
*** If the dryer is not exhausted outdoors, some fine lint will be expelled into the laundry area.** An accumulation of lint in any area of the home can create a health and fire hazard. **The dryer exhaust system MUST be exhausted to the outside of the dwelling!**

Do not allow combustible materials (for example: clothing, draperies/curtains, paper) to come in contact with exhaust system. The dryer **MUST NOT** be exhausted into a chimney, a wall, a ceiling, or any concealed space of a building which can accumulate lint, resulting in a fire hazard.

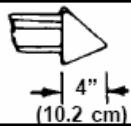
***Exceeding the length of duct pipe or number of elbows allowed in the "MAXIMUM LENGTH" charts** can cause an accumulation of lint in the exhaust system. Plugging the system could create a fire hazard, as well as increase drying times.

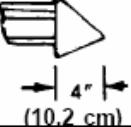
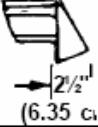
***Do not screen the exhaust ends of the vent system, nor use any screws or rivets to assemble the exhaust system.** Lint can become caught in the screen, on the screws or rivets, clogging the ductwork and creating a fire hazard as well as increasing drying times. Use an approved vent hood to terminate the duct outdoors, and seal all joints with duct tape. All male duct pipefittings **MUST** be installed downstream with the flow of air.

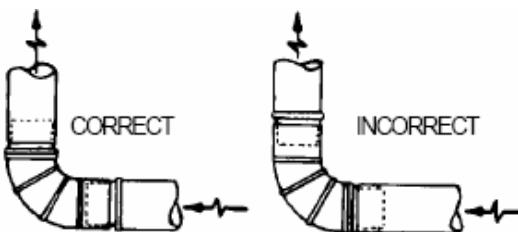
*** Explosion hazard -Do not install the dryer where gasoline or other flammables are kept or stored.** If the dryer is installed in a garage, it must be a minimum of 18 inches (45.7 cm) above the floor. Failure to do so can result in death, explosion, fire or burns.



Vent Calculation Charts

Number of 90° Turns	MAXIMUM LENGTH of 4" (10.2 cm) Dia. Rigid Metal Duct		
	VENT HOOD TYPE (Preferred)		
		Louvered	
0	60 ft. (18.28 m)	48 ft. (14.63 m)	
1	52 ft. (15.84 m)	40 ft. (12.19 m)	
2	44 ft. (13.41 m)	32 ft. (9.75 m)	
3	32 ft. (9.75 m)	24 ft. (7.31 m)	
4	28 ft. (8.53 m)	16 ft. (4.87 m)	

Number of 90° Turns	MAXIMUM LENGTH of 4" (10.2 cm) Dia. Flexible Metal Duct		
	VENT HOOD TYPE (Preferred)		
		Louvered	
0	30 ft. (9.14 m)	18 ft. (5.49 m)	
1	22 ft. (6.71 m)	14 ft. (4.27 m)	
2	14 ft. (4.27 m)	10 ft. (3.05 m)	
3	NOT RECOMMENDED		



INSTALL MALE FITTINGS IN CORRECT DIRECTION

In installations where the exhaust system is not described in the charts above, the following method must be used to determine if the exhaust system is acceptable:

1. Connect an inclined or digital manometer between the dryer and the point the exhaust connects to the dryer.
2. Set the dryer timer and temperature to air fluff and start the dryer.
3. Read the measurement on the manometer.
4. The system backpressure **MUST NOT** be higher than 0.75 inches of water column. If the system backpressure is less than 0.75 inches of water column, the system is acceptable. If the manometer reading is higher than 0.75 inches of water column, the system is too restrictive and the installation is unacceptable.

Although **vertical** orientation of the exhaust system is acceptable, certain extenuating circumstances could affect the performance of the dryer:

- Only rigid metal ductwork should be used.
- Venting vertical through a roof may expose the exhaust system to down drafts causing an increase in vent restriction.
- Running the exhaust system through an uninsulated area may cause condensation and accumulate lint faster.
- Compression or crimping of the exhaust system will cause an increase in vent restriction.
- The exhaust system should be inspected and cleaned a minimum of every two years with normal usage. The more the dryer is used, the more often you should check the exhaust system and vent hood for proper operation.

Reference Sheet

SPECIFICATION	ELECTRIC MODELS	GAS MODELS
Electrical		
Volts 120/208 or 120/240	120/208 or 120/240	120
Amps (circuit)	30	15
Motor wattage	160-350 Watts	160-350 Watts
Heat input (Watts @ 240 VAC)	3200/4500	---
Heat input (BTU/Hr.)	---	20,000
Auto. Elec. Ignition	---	Yes
Component Resistances*		
Electric Models		
Gas Models		
Drive motor (120 volt, 60 Hz, 1/4 h.p. 1725 rpm)		
Motor Start Winding	4.5 Ohms	4.5 Ohms
Motor Run Winding	3.8 Ohms	3.8 Ohms
Heating Element	12.8 Ohms	---
Control Thermistor	50K Ohms +/- 5% @ 77° F	50K Ohms +/- 5% @ 77° F
Burner Assembly		
Ignitor	---	50 - 400 Ohms
Secondary Coil	---	1200 Ohms
Booster Coil	---	1320 Ohms

* +/- 10% @ 77° F

Function Test Sequence

This test is designed to check all the functions of the dryer.

It will not give the fault codes at the end of the test. (Go to Displaying and Reading Error Codes)

Starting Function Test Sequence

Press and hold Select and Cancel buttons simultaneously for 6 seconds to reset the control. The buzzer will sound 1 time and “rES” will be shown briefly in the display.

Immediately after, rotate cycle selector knob 5 turns counter-clockwise to the second position from the bottom. Press and hold the Options and Cancel buttons simultaneously for 2 seconds. The control will enter test mode, the buzzer will sound 3 times and all LED's will rapidly flash.

Utilizing Function Test Sequence

After entering the test mode, the cycle selector knob can now be rotated to select the following tests:

Rotate the cycle selector knob clockwise from the starting position:

0 turns: All LED's will flash.

1 turn: Drive motor runs; heat source is on. Drying LED is lit. “H” and the control thermistor reading will toggle back and forth in the display.

2 turns: Drive motor runs; heat source is off. Cool Down LED is lit and “AF” (Air Fluff) is displayed.

3 turns: Drive motor runs; heat source is off. Drying and Cool Down LED's are lit and numbers appear in the display showing moisture sensor readings. Opening the door (press in on door switch plunger) and placing a finger on the both moisture sense bars at the same time will make the numbers decrease. In controls that do not have a digit display, the More Dry LED should be ON. Opening the door (press in on door switch plunger) and placing a finger on the both moisture sense bars at the same time will make the Damp LED come on.

4 turns: Drive motor runs; heat source is off.

Key test:

- a. When the Temperature key is pressed, all the temperature LED's should light.
- b. When the Dryness key is pressed, all the dryness level LED's should light.
- c. When the Options or Select key is pressed, all the Option LED's should light.
- d. When the Start/Pause key is pressed, all the cycle status LED's should light.
- e. When the Cancel key is pressed, all the cycle status LED's should light.

5 turns: Drive motor runs; heat source is off. Cool Down LED is lit. Control thermistor reading is displayed.

6 turns: Drive motor runs; heat source is on. Drying LED is lit. Control thermistor reading is displayed.

7-11 turns: All LED's will flash

Exiting Function Test Sequence

To EXIT test mode, press and hold the Select and Cancel buttons simultaneously for 6 seconds or disconnect power from dryer. Dryer will be reset for regular operation.

Error Codes

Accessing Error Codes

1. Press and hold the Select and Cancel buttons simultaneously for 6 seconds to reset control. The buzzer will sound 1 time and “rES” will be shown briefly in the display.
2. Immediately after, rotate cycle selector knob 2 turns counter-clockwise to the third position from the top, and then press and hold the Select and Cancel buttons simultaneously for 6 seconds. The control will enter Field Test Mode, the buzzer will sound 3 times, and the digital display will alternate between “Fld” and the firmware revision number (ex. “r03”).
3. Rotate the cycle selector knob 2 turns counterclockwise. The error code will appear in the digit display.

To move on to the next code, press the Options button.

To clear code, press the Select button. Code will be cleared when mode is exited.

To exit this mode, simultaneously press and hold the Select and Cancel buttons for 6 seconds.

Error Code E10

Label: General EEPROM Fault

Description: Problem with communication between EEPROM and the microprocessor.

Solution: Clear code, exit mode and start dryer. If problem persists, replace electronic control.

Error Code E11

Label: Checksum Error

Description: Problem with communications or memory did not check, one has become corrupted.

Solution: Clear code, exit mode and start dryer. If problem persists, replace electronic control.

Error Code E12

Label: Non fatal R/W error

Description: Problem reading or writing to the memory or input/output.

Solution: Clear code, exit mode and start dryer. If problem persists, replace electronic control.

Error Code E24

Label: Control NTC Short Circuit

Description: Control thermistor or its wiring is shorted.

Solution: Remove wires from control thermistor and measure resistance of thermistor.

If reading is not 50 K ($\pm 10\%$), replace thermistor.

If reading is within 50 K ($\pm 10\%$), check wiring between thermistor and electronic control.

If good, replace electronic control.

Error Code E25

Label: Control NTC Open Circuit

Description: Control thermistor or its wiring is open.

Solution: Remove wires from control thermistor and measure resistance of thermistor.

If reading is not 50 K ($\pm 10\%$), replace thermistor.

If reading is within 50 K ($\pm 10\%$), check wiring between thermistor and electronic control.

If good, replace electronic control.

Error Code E4A

Label: Program Timeout Fault

Description: The drying time has exceeded program time for that cycle.

Solution: Press Pause Cancel and SELECT buttons for 6 seconds to exit test modes. Position cycle selector to NORMAL, temperature selector to HIGH HEAT & touch START.

Check for anything that would extend dry times such as:

- a) no heat
- b) restricted vent
- c) blower fan blade broken or loose
- d) dryer installed in closet with solid door
- e) bad connection in moisture sensor bar circuit or dirty bars.

If dryer operates normally but code returns, replace electronic control.

Error Code E5B

Label: Heater Fault (no heating)

Description: Temperature reading of control thermistor has not changed in a certain amount of time.

Solution: Position cycle selector to Normal, temperature selector to High Heat and touch Start. Measure voltage across terminals on relay RL2 (heater relay) on electronic control.

If meter reads 240V on electric models and 120V on gas models, replace electronic control.

If meter reads zero, remove power from dryer. Disconnect wire going to NO terminal on the relay RL2. Reconnect power and measure voltage drop between terminal COM on relay RL2 and Neutral.

If meter reads zero, wire between incoming line and relay RL2 is open. If meter reads 120V, check the rest of the heater circuit.

Error Code E68

Label: Key (button) Struck Fault

Description: One of the keys (buttons) is stuck closed (active).

Solution: Enter Function Test Mode and perform Key Test to determine which button is at fault. Carefully free the key (button) and perform the test again.

If button is free but the key struck code E68 still exists, replace electronic control.

Error Code E8C

Label: Too many trips in a period of time.

Description: The safety (high limit) thermostat has tripped too many times within a certain period of program time.

Solution: Check for blocked lint filter, blocked exhaust, air leaks around air duct, broken blower fan blades, worn or loose drum seals, dryer installed in closet with solid doors or door seal not correctly seated.

Error Code EAF

Label: Watch Dog Reset

Description: Microcontroller has been reset by internal Watchdog timer.

Solution: Clear code, exit mode and start dryer. If problem persists, replace electronic control.

Customer Codes

NOTE: During normal operation, the display may show:

“ad” - dryer is in an auto dry cycle.

“dn” - cycle is done in auto dry.

“PF” - a power failure to the board has occurred.

“Err” - an error has been detected.

“LOC” - control lock is activated.

“PAU” - cycle has been interrupted.

Customer Error Codes

Error Code	Error	Possible Causes	Solutions
4 beeps/E4A	Dryer runs to long	Lint filter blocked Ventilation system clogged Dryer overloaded	Remove lint: wash lint filter to remove the softener sheet residue. Clean out ventilation system Reduce load size
9 beeps/E9E	Line voltage problem	Low voltage Intermittent voltage	Press Cancel
6 beeps/E68	Push Button Does not function	Pushbutton held to long or wedged in the control panel	Press buttons lightly and release. Disengage button

Outdoor Grills

All Service Providers are authorized to perform service on Grills.

March 1, 2005, all authorized Electrolux service companies have been approved to conduct repairs on all of its outdoor grills (Frigidaire, Frigidaire Gallery, and Electrolux ICON brands). These changes were communicated to the field in the Feb-Mar 2005 Service Bulletin.

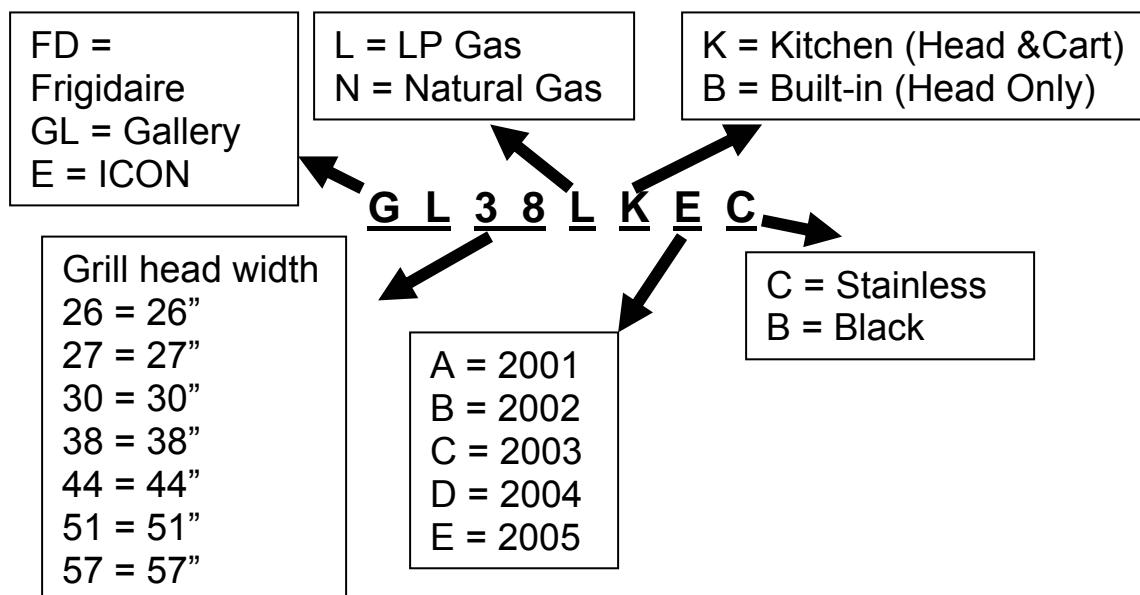
Contact Center procedures for service call referral as well as claims for warranty repairs via ServiceBench will be handled in the same fashion as all other branded service claims.

Should a consumer require service for their Frigidaire outdoor grill, they are welcome to contact our Augusta-based Contact Center via a toll free number 1-800-320-0859.

Upon completing the repair, service companies should file their claims via ServiceBench in the same method that is used for all other Frigidaire/Electrolux warranty claims.

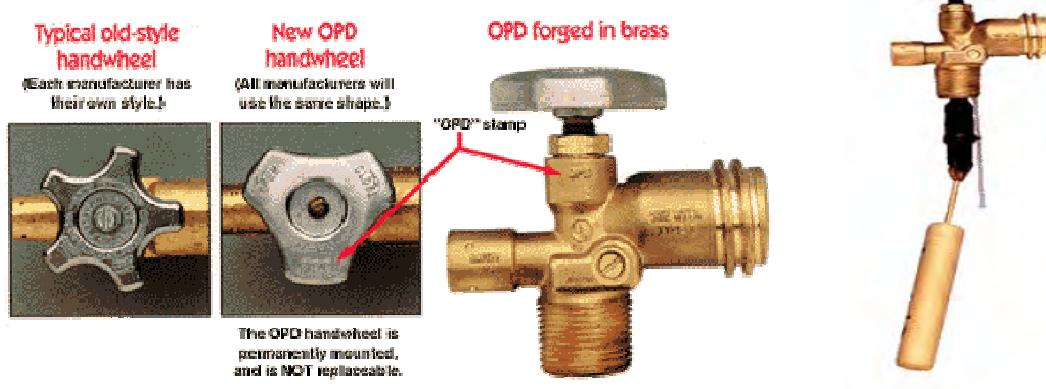
Electrolux's Factory Technical Information Department (TID) is available to assist service technicians in the field. Contact the department at 1.888.842.3660 and press option 5 for outdoor grills.

Model Number Coding



Outdoor Grill Safety Devices

O.P.D- Overfilling Prevention Device



This device shuts off the flow of gas to a cylinder after 80% capacity is reached. This limits the potential for release of gas when the cylinder is heated, averting a fire or possible injury. The L.P. cylinder must have a shut-off valve terminating in an L.P. gas supply cylinder outlet specified, as applicable, for connection No. 510 in the standard for compressed gas cylinder valve outlet and inlet connection ANSI/CGAV1. Cylinders must not be stored in a building, garage, or any other enclosed area.

Flow Limiting Device

Type 1, QCC-1 Connector vs Prest-O-Lite Adapter

A Prest-O-Lite (POL) adapter is a commonly used brass nut-and-nipple connector with left-handed threads, used for propane cylinders. A wrench is necessary to tighten a POL fitting.



The QCC-1 connector is also a nut-and-nipple assembly, and is easily identifiable by the large, external right-hand threads on the cylinder valve.



The QCC-1 connector's patented nut is easy to connect and tighten without tools. It also features internal left-hand threads that allow you to connect appliances that still use POL connections. The internal threads also make it easier for your LP supplier to fill your cylinder, without using an adapter.



Note

QCC-1 connections, both at the cylinder valve and at the appliance end, have certain **safety advantages** over most POL connections. The nipple has a patented **Flow Limiting Device** that shuts off gas flow if a leak occurs between the regulator and the appliance burner valve. It activates each time you open the cylinder valve, so be sure the appliance is turned OFF before you open the valve when you open it, **SLOWLY**. If the appliance is not turned OFF when you open the valve or if it is opened quickly the Flow Limiting Device will not be able to reset and will restrict gas flow to the appliance. The QCC-1 connector is also heat sensitive, shutting off the flow of gas if it is exposed to temperatures between 240 & 300 degrees F.

<<http://www.campingworld.com/browse/categories/index.cfm?deptID=3&catID=302>>

Spark Ignition System

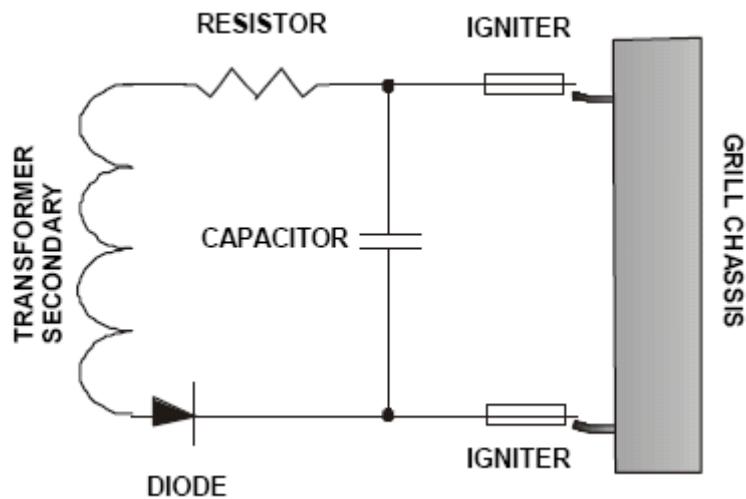
The number of igniters will vary with the size and features of the model, but the spark ignition system operates the same on all models.

The ignition system is made up of six components:

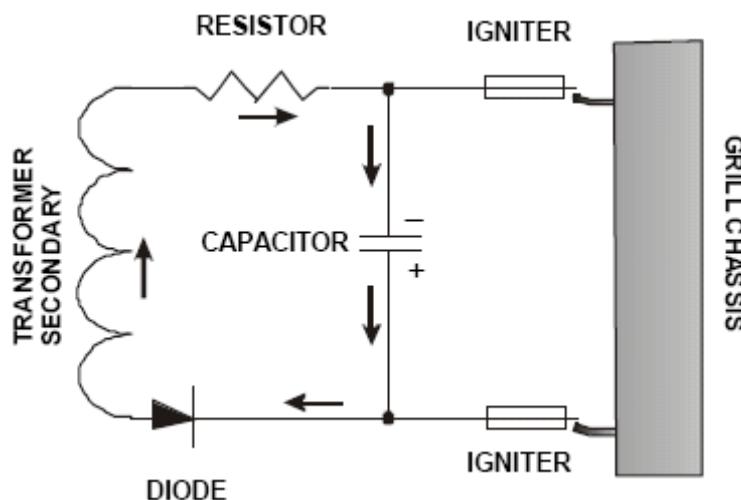
1. AA or AAA battery to supply power
2. Battery holder with igniter button switch
3. Spark module
4. High voltage wire
5. Igniter
6. Chassis

How it operates:

When the igniter button is pushed on the battery holder, 1.5 volts is applied across the input terminals of the spark module. The module then steps the voltage up to about 15,000 volts. It is easier to understand the module and igniter circuit, if we look at a simple charging circuit. The circuit is made up of a transformer secondary used to setup the voltage, a diode used to rectify the current, a capacitor used to store an electrical charge, a resistor used to slow down the charging of the capacitor, igniters tips that provide the air gap to create the spark, and the grill chassis which provided the path for current to flow between the igniters.

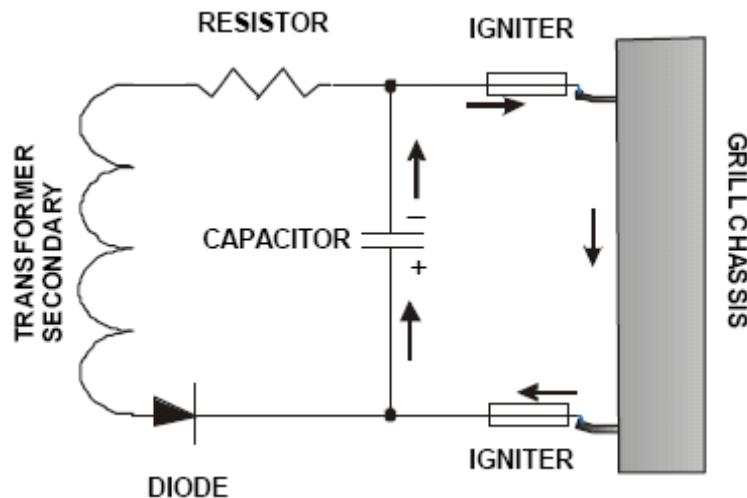


When power is applied to the circuit, on first half of the cycle, electrical current flows in the circuit formed by the diode, transformer, resistor and capacitor, charging the capacitor negative to positive. Current does not flow in the igniter/chassis circuit because of the high resistance of the air dielectric between the igniter points, but the capacitor and igniter/chassis circuits are in parallel.



How it operates continued:

On the other half of the cycle, the diode blocks the discharge path of the capacitor. The capacitor continues to charge every other half cycle, until the charge on the capacitor is high enough to break down the dielectric of the air between the igniter points. When the dielectric breaks down a spark jumps between the igniter points. When the spark jumps, it creates a short between the igniter points, current flows in the capacitor, igniter/chassis circuit, discharging the capacitor.



With the capacitor discharged the electrical difference drops below the dielectric breakdown point and the capacitor starts to charge again. This cycle will continue as long as the button is held in.

Problems that can occur in the system:

- 1. Battery failure:** If the battery fails, no power is applied and the system becomes completely inoperative.

Correction: Test the battery under load and if necessary replace the battery.

- 2. Battery holder or switch failure:** If the holder or switch fails, no power is applied and the system becomes completely inoperative.

Correction: Disassemble and clean. If necessary, replace the battery holder.

- 3. Module failure (No snapping sound):** When the module fails the system becomes completely inoperative.

Correction: Since other failures can cause the module not to snap, remove the output wires from the module and push the start button. Listen to hear if the module snaps.

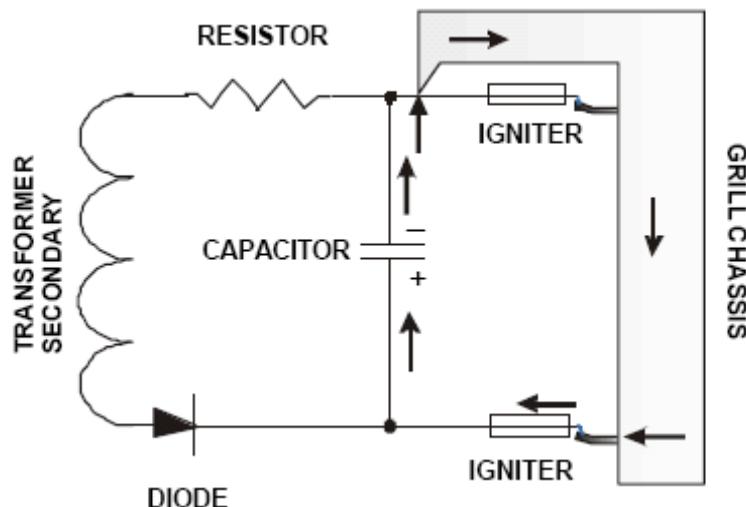
Problems that can occur in the system continued:

- If the module snaps, the output wires are shorted.
- If the module does not snap, check the polarity and measure the voltage at the battery holder with the button push in. If the reading is below 1 volt check the battery and the holder.
- If the reading is above 1 volt, inspect the input wiring to the module. If wiring is good replace the module.

4. Output wiring failed open (3-igniter grill): If an output wire fails open, the igniter that the wire is connected to will not spark.

5. Output wiring failed open (4-igniter grill): If an output wire fails open, 2 out of the 4 igniter will not spark.

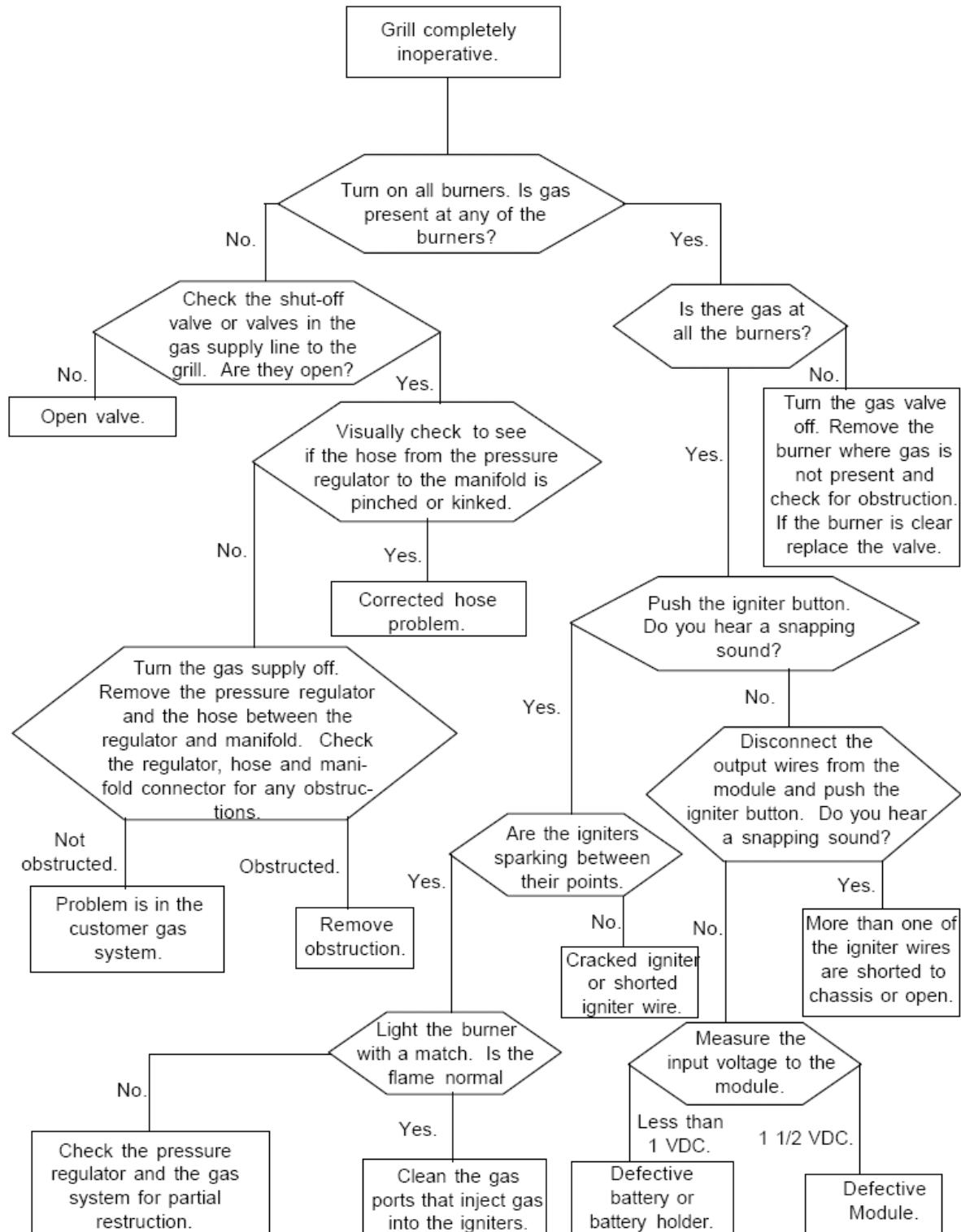
6. Output wire or igniter shorts to chassis: A short to chassis bypasses the igniter between the short and chassis. The other igniters will spark.



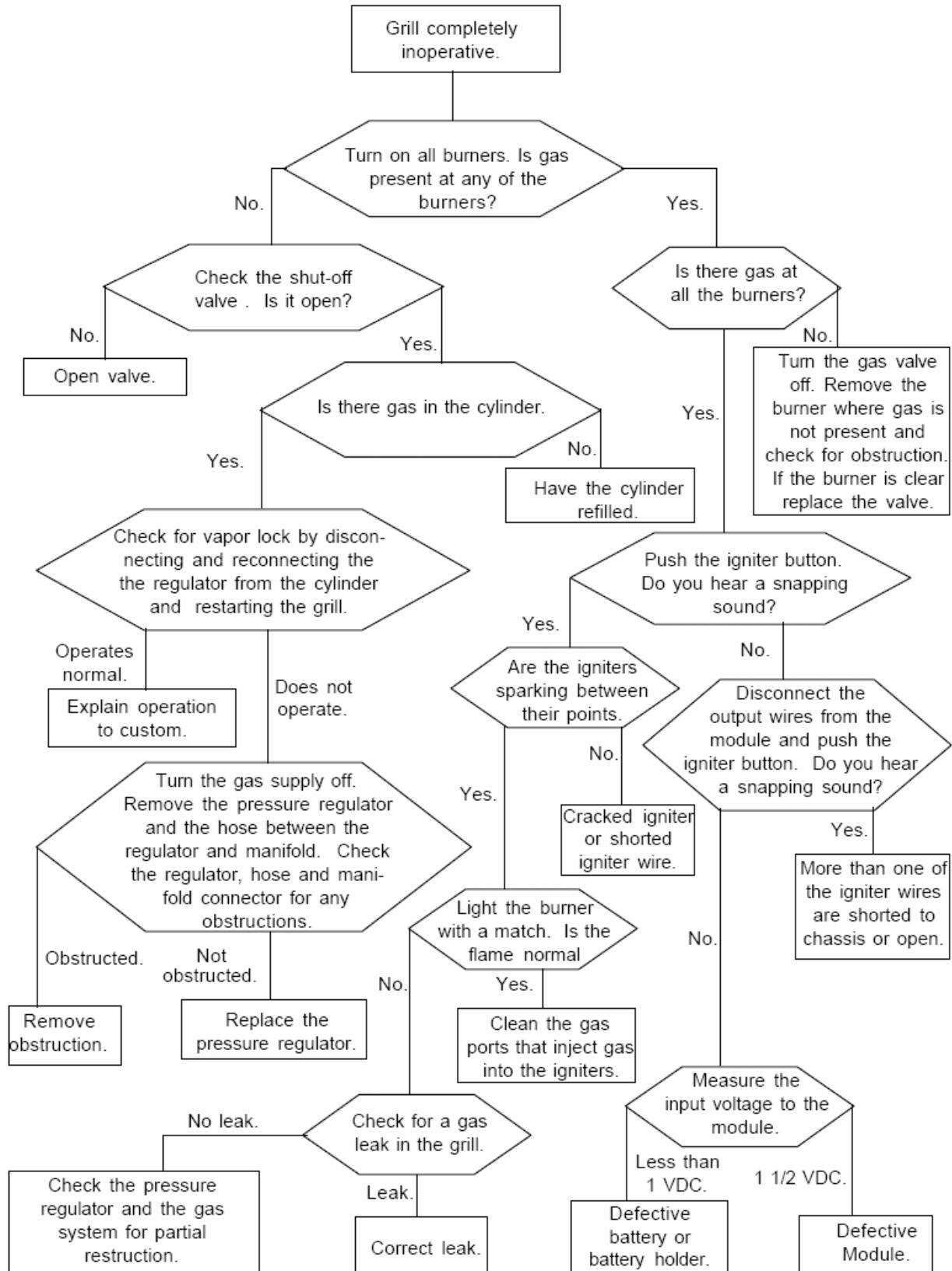
7. Igniter tip shorted out to chassis by grease: Inspect and clean igniter as need.

Troubleshooting Flow Charts

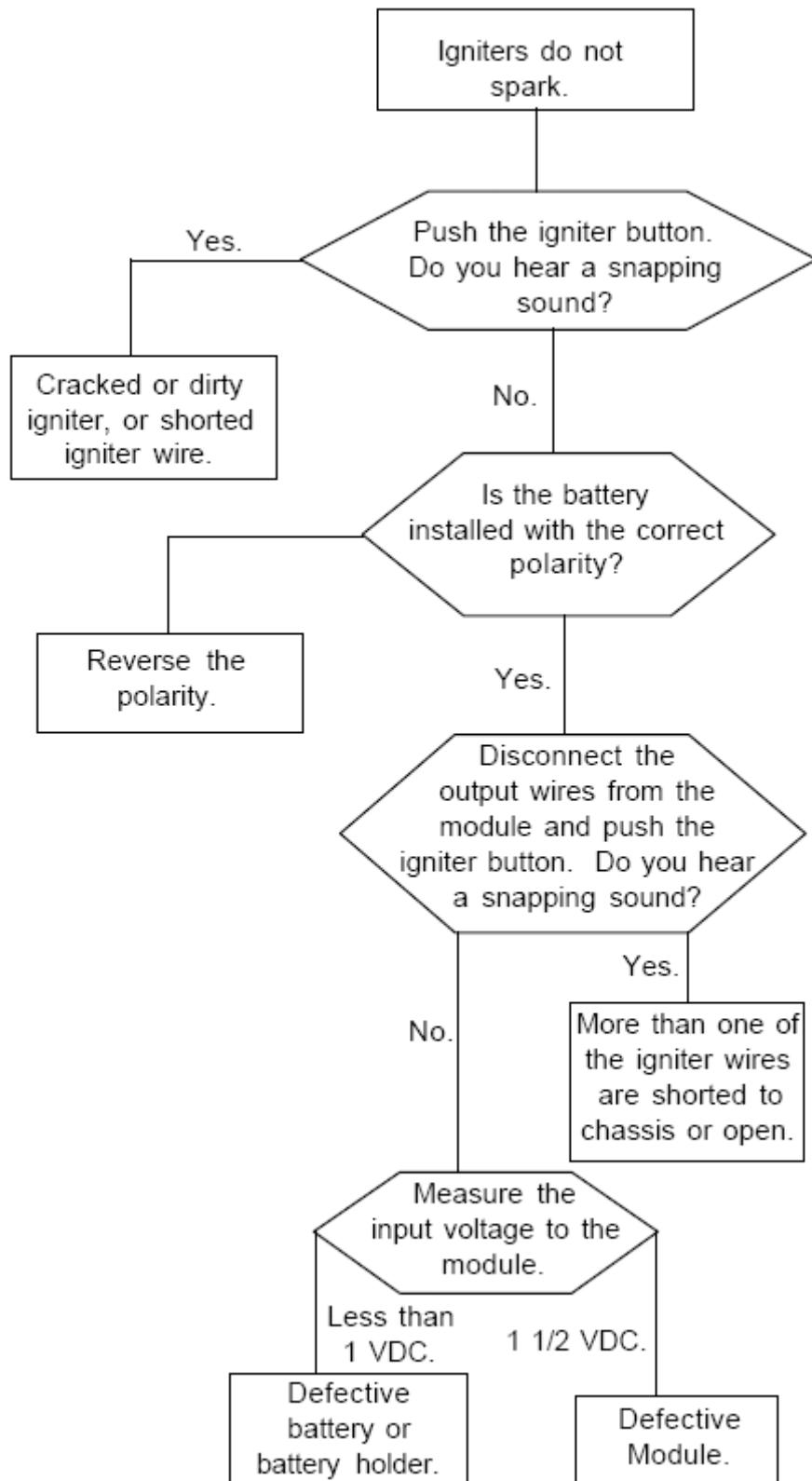
Grill completely inoperative. (Grill connected to natural or large L.P. tank)



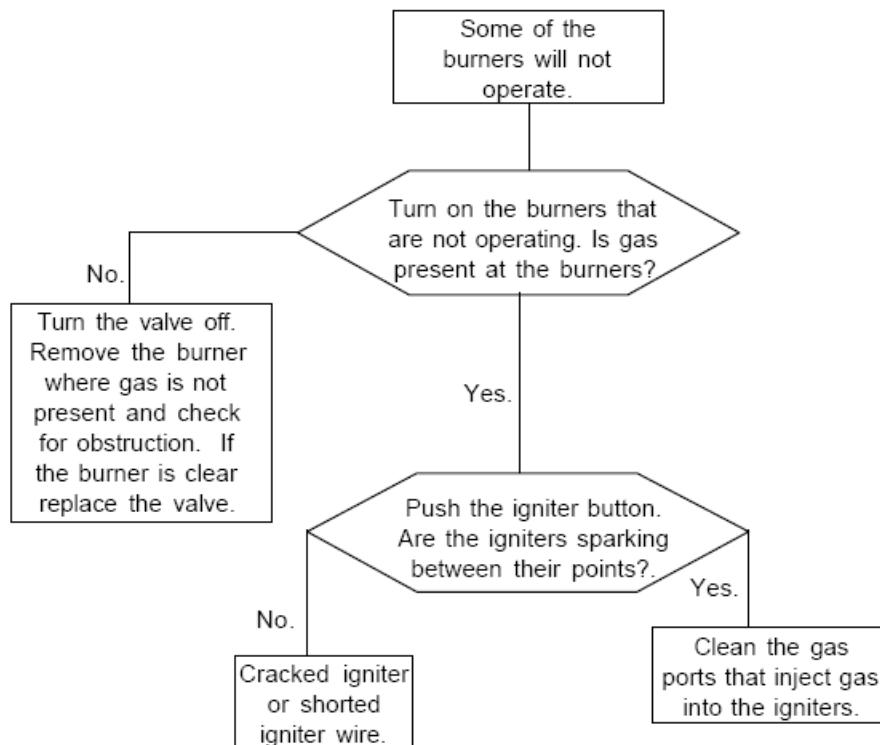
Grill completely inoperative. (Grill connected to 20 lb L.P. tank)



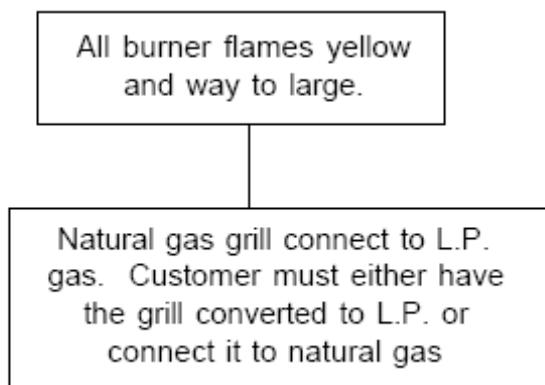
Igniters do not spark.



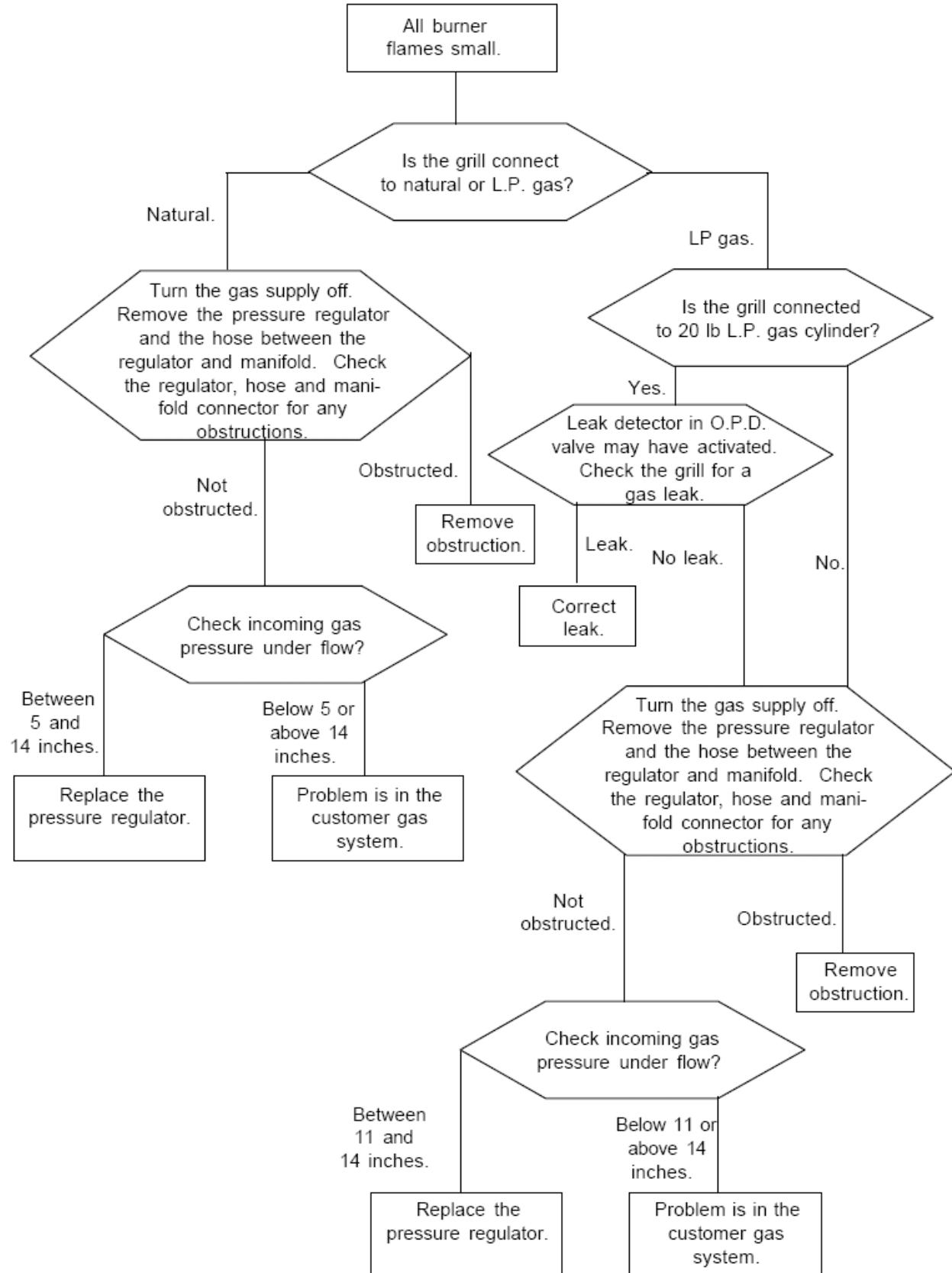
Some of the burners will not operate.



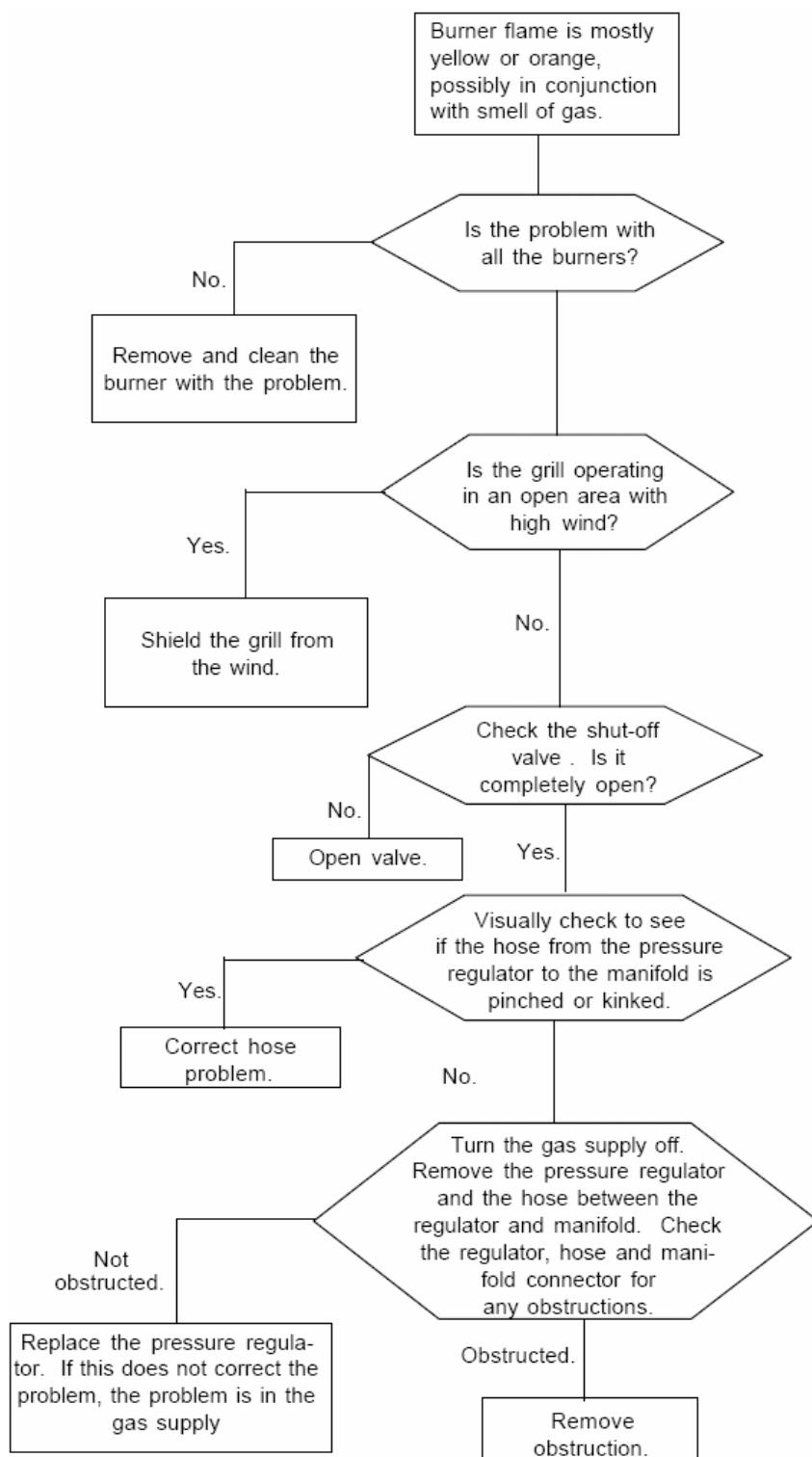
All burner flames yellow and very large



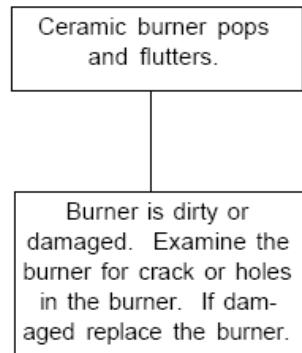
All burner flames small (about 1/4 inch)



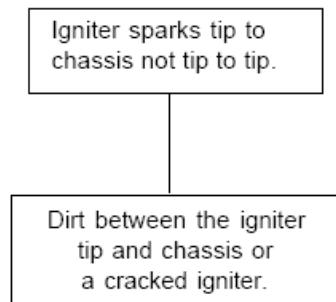
Burner flame is mostly yellow or orange, possibly in conjunction with smell of gas



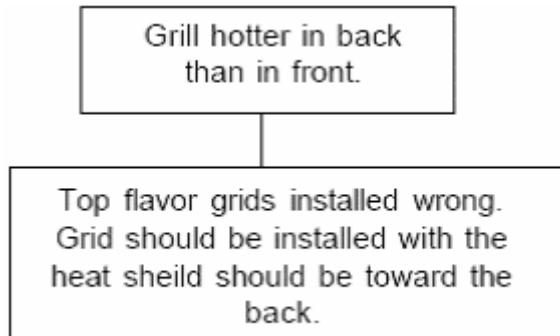
Ceramic burner pops and flutters.



Igniter sparks tip to chassis not tip to tip



Grill hotter in back than in front. (Model with serial number that start with the letter "L")



Cooking Product Questions & Answers

RANGE

Q. On a model with an "ESEC" system, (electronic surface element control) the element continues to heat with control turned to off, display may read "HE" for Hot Element.

A. Relay stuck closed on Power Board; replace Power Board.

Q. Oven is not heating ... the ignitor is getting red but not allowing valve to open.

A. Check the amp draw on the igniter if less than 2.9 amp change igniter, if 2.9 or greater, check oven shut off lever on side of pressure regulator.

Q. New gas range installation, have no gas to either bake or broiler burners but ignitor's are glowing red.

A. Shut off lever on side of pressure regulator turned off.

Q. Time of day not displayed on clock unless you press the "clock" keypad button; then time of day disappears again.

A. Time of day toggled off, hold clock keypad continuously 15 seconds to toggle the display back on; ES200 and ES300 series only.

Q. After setting oven for bake, or while opening oven door clock display goes blank. Voltage at plug tests okay (L1/L2 to Neutral 120 volts, (L1 to L2) 240 volts.

A. Possible floating neutral. Load test the neutral circuit and check for 120 volts, if voltage drops under load you have a house related supply problem.

Q. Hot surface light is staying on after the glass smoothtop has cooled to room temp..

A. Contacts on element limiter are stuck closed.

To diagnose: Remove power to unit; disconnect either the black or gray wire from limiter, ohm out these two terminal, if contacts closed replace that element, if open check each remaining element repeating process till element with stuck contact is found.

Q. The clock is dead.

A. First check for power to the clock while the clock is connected to its power supply. Check the house supply while under a load.

Q. F1 and F3 or F10 and F30 codes.

A. Check oven sensor/probe resistance value at the clock connector across the two violet wires; at room temperature of about 75 degrees reading should be between 1091 to 1100 ohms or close to this. If no resistances check wires to sensor/probe, check sensor/probe connector, check sensor/probe. If sensor/probe and harness test okay replace EOC.

Q. Repeated lock motor failure after running a self clean cycle.

A. Check for missing or loose oven interior light lens cover.

Q. Door glass is fogging up and sweating.

A. Verify the door glass is tight against the door liner. Check the door seal. Some moisture is normal.

Q. Door side trim loose from outer door glass.

A. Replace door top cap with newer style that now captures the side trim. New style: (316468400, white); (316468401, black); (316468402, Bisque).
Also order Qty (2) double sided tape (part number 316237300).

Q. Unit continually beeping but no fault code in the EOC control.

A. Models with a lower (Mini Oven), the Mini Oven does not have an electronic display. When the mini oven control does not detect the sensor/probe circuit a beeping sound is heard. Place main oven into a lock out mode and if the beeping stops the problem is in the mini oven sensor/probe circuit. Check resistance of the mini oven sensor/probe at the Mini Oven Control board P2 connector. Check harness connection at sensor/probe. Repair as required. Do not replace the EOC it will not solve problem.

Q. Broken potentiometer switch or getting F7 (22 or 32) in display.

A. Make sure the correct part is being replaced, the single and dual potentiometers have a different resistance value.
Service Kit 5304454273 replaces the single element gray body switch 316239604.

Q. Oven door not staying open to broil stop position, **Electric Models Only.**

A. Replace door hinges.

Q. Hard to turn surface burner valves when oven is in use, **Gas Models Only.**

A. Check cavity insulation blanket that it is pulled up to the front frame. If replacing the surface valves have them returned to factory for evaluation.

MICROWAVE

Q. Microwave is noisy when running (models PLMB209; GLMB209; PLEB30M9EC; GLEB30M9E; PLEB27M9EC; GLEB27M9E**).**

A. Install sound damper Noise Reduction Kit 5304454990.

Also check that these cushions are installed: 5304441910 MAG CUSHION and 5304441909 CUSHION BASE RAIL.

Q. Microwave is dead.

A. Open C/T fuse, located above magnetron tube. Replace C/T fuse and monitor switch; check air flow across magnetron (adjust fan if hitting housing).

Q. Microwave dead or blank display after replacing PC Board (or new unit).

A. Check the ¼" inch connector plugs and relay RY1 and/or RY2 on PC board, they could be connected 180 degrees in reverse, (check wire diagram for correct wiring locations).

FRIGIDAIRE GAS RANGE SEALED BURNER ORIFICE DATA CHART

For models with lift off style burner heads
Data current as of September 2006

Burner Rating (Natural Gas)	Natural Gas Orifice Size(mm)	Natural Gas Orifice Part#	Convert With LP Gas Orifice Size(mm)	LP Orifice Color Marking	LP Orifice Part#	Burner Rating After LP Conversion
17,000 BTU	2.03	316237909	1.15	BLACK	316237910	14,000 BTU
16,000 BTU	1.99	316237912	1.15	BLACK	316237910	14,000 BTU
14,000 BTU	1.93	316237900	1.01	RED	316237904	11,000 BTU
12,000 BTU	1.75	316237901	0.95	GREEN	316237905	10,000 BTU
9,500 BTU	1.54	316237902	0.89	NONE	316237906	8,000 BTU
5,000 BTU	1.09	316237903	0.68	BLUE	316237907	4,500 BTU

Note that it is sometimes easy to confuse the blue marking and green marking on the LP orifices. Confirm the correct size by checking the numbers stamped on the orifice.

When viewing orifice to determine orifice size the flat top should be up and the threaded end should be down.
See the example at right.



Electronic Freezer Control Diagnostics

GLFU2067FW / GLFU1767FW / 216531598 / GLFU1467FW / 216558067
FFU1467FW / FFU2067FW / FFU1767FW / All Kenmore Elite Models

Manual Defrost

A 30 minute defrost cycle is engaged after every 12 hours of accumulated compressor run time.

To manually engage defrost, press and hold the QUICK FREEZE and ALARM RESET buttons until the UI beeps once and display “dF” to acknowledge that it has entered a 30 minute defrost cycle, after which the freezer will reset the compressor run time and return to normal operation.

NB: For a period of one hour, from the time defrost is engaged, the temperature displayed will remain unchanged and the temperature alarm will also be disabled.

Diagnostic Mode

The steps required to enter Diagnostic mode are:

- 1.) Adjust the temperature setting to “0°F” using the UP ARROW and DOWN ARROW buttons.
- 2.) Press and hold both UP ARROW and DOWN ARROW buttons simultaneously for 10 the UI beeps and display “88”, indicating the system has entered diagnostic mode.

To exit diagnostic mode, press and hold the UP ARROW and DOWN ARROW buttons until the UI beeps. The display should display the interior temperature indicating the system is no longer in diagnostic mode.

Once in Diagnostic mode, the following information can be verified.

Software Version

The software version may be displayed by pressing the QUICK FREEZE button. Currently it is 3 for testing purpose. Once we go in production for the first time, we will start from 0.

Door Switch Status

The door switch status may be displayed by pressing the DOWN ARROW button.

- If the door switch is open, “0” should be displayed.
- If the door is closed, “C” should be displayed.

Note: The light switch is connected to a low voltage circuit which sends a signal to the microcontroller about the status of the door. Depending on the status, the Micro runs a relay to control the light, just like the compressor and heater. The light has line voltage and do not change without turning off the power.

Thermistor Status

If there is a thermistor error the display will alternate between “E” and the temperature setting. You may identify the type of error in diagnostics mode. Press the ALARM RESET button to display the thermistor status.

- If the thermistor is operating correctly, “--” is displayed.
- If the thermistor is open circuited, “0” is displayed.
- If the thermistor is short-circuited, “S” is displayed.

The resistance of the thermistor may be measured from the rear of the unit. To do so, first locate the 4-pin connector plugged into the ECU. The thermistor is connected through the red (or black and white strip) and black wires. The easiest way to locate this is to look for two wires going to the door switch from a four position connector and other two are connected to the thermistor. If the thermistor is operating correctly, the resistance between these two wires should be $10k \pm 0.5k\Omega$ at room temperature ($20^\circ\text{C} / 70^\circ\text{F}$).

NB: If there is a failure in relation to the thermistor the freezer will enter full compressor run mode makes it a fail safe situation.

Model Number

Press the UP ARROW button to display the model number. Once you have displayed the model number you may change it by first pressing and holding the UP ARROW and QUICK FREEZE buttons until the UI beeps and then using the UP ARROW and DOWN ARROW buttons to select a new model number. After changing, wait till it displays “88” again and then exit diagnostic mode to save the changes.

Important info for Model Numbers

Another improvement we have made is that same User interface and Electronics control is used for all different models. That minimizes number of parts required on all different sizes of freezers. There is only one catch. There is an option call model selection that we perform at our location. This model selection option differentiates between models and sizes. Although this might change as we go on, currently we are using the following IDs.

Model	ID
Upright Frost Free 21cf	0
Chest 20 and 25cf	1
Upright U17 and U20 Frost Free	2
Frost Free Chest 14cf	3
Etc.	

This model ID is permanently written on the user interface memory at initial power up. The default ID is “0”. If you are replacing a User interface please be sure to follow the procedure below. At initial power up the display will blink model ID “0”. Use Up and Down arrow to select the appropriate model and press ALARM RESET. This will permanently write the ID into the memory. This is a very critical process to ensure an optimal performance. For example, if you select a static model for a Frost Free freezer, it will never defrost. Or if you select a Frost Free model for a Static type, It will try to run the defrost heater for half an hour every 12 hours of compressor run time even though there is no heater.

If for any reason you selected a wrong model, do not worry, you can fix it; go into diagnostic and change model. Even if you think you have selected the right model, it is a good practice to double check the model ID by going into diagnostic. You already know how to change the model number in diagnostic.

Electronic Freezer Control Diagnostics

216554170 / 216568446 / 216572886 / 26052 / 26062 / 26432 / 26442 / 26452 / 26458 /
26462 / 26468 / 26732 / 26742 / GFU1464FW / GFU1764FW/ GFU2065FW/
FFU1464FW/ FFU1764FW / FFH1765FW/ FFU2064FW / FFU2065FW

The low-end electronics is used in these models. It is the basic electronics pack with 1 to 7 settings rather than temperature. The thermistor is located on the board.

Initiate Service Mode

If both buttons are held for a couple of seconds while on setting “4”, the control will enter Service Mode.

If there is a Thermistor Error at the time, a button must be pushed so that the display shows a “4” instead of an “E”, before it will let you enter the Service Mode.

Diagnostics Indicator

Upon entering Service Mode, an “8” is displayed for a couple of seconds.

Next, the Model ID is displayed.

Then the Software Version is displayed.

Finally the Thermistor status is displayed (“-“ for good, “0” for open, “C” for closed). Service Mode exits automatically after displaying this information.

Manual Defrost

To enter Manual Defrost, the control must be set to “2” and then both buttons must be held down for a couple of seconds.

A “d” is displayed while in Manual Defrost.

The defrost heater is engaged for the entire 30 minute cycle.

If an error occurs while in Manual Defrost, the control will enter Fail Safe instead.

Manual Defrost cannot be entered while in Fail Safe or while it displays E.

Failure Indication

Upon entering Fail Safe mode for any reason, the display starts to flash an “E”.

Stuck Key Error

The unit will enter Fail Safe if any key is held for more than 30 seconds in any of the settings 1 through 7.

Fail Safe will also be entered if both keys are held for longer than 30 seconds. If this occurs on setting “2”, then Manual Defrost will be entered first, and then Fail Safe will be entered 30 seconds after the start of Manual Defrost. If this occurs on setting “4”, Service Mode will be entered first, and Fail Safe will be entered 30 seconds after Service Mode is finished.

Fail Safe will be exited upon the release of the held keys.

The unit will not enter Fail Safe when on setting “0”.

Electronic Freezer Control Diagnostics Single Digit Display

Defrost Frequency = 12 hrs. (Length, 30 minutes)

High Voltage Control board location = In the rear compressor compartment.

User Interface Location = In the handle or Bezel.

How to Initiate a Defrost? = 2 Ways:

Method 1: Depress “Alarm off” and “Quick Freeze” buttons until the control beeps. It is the same method to terminate a defrost cycle.

Method 2: Depress the micro switch in the round opening on the High Voltage Control board next to the 3 pin battery connector. The control will beep when the defrost cycle is activated.

When initiating a defrost cycle, the unit should shut down regardless of the status of the defrost components. (Open or Closed Defrost Heater or Bimetal)

When defrost is either initiated or terminated an audible confirmation “beep” will be heard from the main control box.

Diagnostics Mode

Set the cold control at position 4. Depress the “Alarm off” and “Quick Freeze” buttons for 6 seconds. Electronics for Upright frost free17, 20 and Upright static 14cf (**EHP Part number 216833800 and 216883900**) will go into diagnostic mode and the Temperature alarm flashes, Red, Green, Red, Green indicating it is in diagnostics. For rest of the

models you should see the following blinking pattern on the user interface before going into diagnostic.

For Chest 18, 20, 23 and 25 only: Electronics Part number: 216893100

QF Green LED	Power On Amber LED	Alarm Bi-Color LED
Green	OFF	OFF
OFF	OFF	Green
Green	OFF	OFF

For Chest 15cf model only: Electronics Part number: 216912700

QF Green LED	Power On Amber LED	Alarm Bi-Color LED
Green	Yellow	OFF
OFF	OFF	Green
Green	Yellow	OFF

For Upright 14cf model only: Electronics Part Number 216923500

QF Green LED	Power On Amber LED	Alarm Bi-Color LED
OFF	OFF	Green
OFF	OFF	Green
OFF	OFF	Green

Press any buttons to get into diagnostic mode now.

The Temperature alarm flashes, Red, Green, Red, Green indicating it is in diagnostics.

Error reporting during diagnostic

Quick Freeze LED – If the quick freeze LED flashes, you have bad Cold Control.
(The resistance of the Cold Control is 3-4K Ohms)

Power LED – If the power LED flashes, you have a bad Thermistor.
(The resistance at 77° F is 10k ±0.5k Ohms)

The resistance of the thermistor and variable resistor (Cold Control) can be checked from the rear of the unit without having to disassemble the evaporator cover. Locate the small 4 pin disconnect plug on the electronic control. (Red, Blue and Gray) Measure the resistance between the red and the gray wire; this is the thermistor connection. (About 10k ±0.5k Ohms at room temp.) Now measure the resistance between the gray and blue wires, this checks the cold control resistance (3-4K Ohms) at setting 4. **Freezer**

Technical Information

Evaporator Kits with Heat Exchanger for Static ("Manual Defrost") Upright Freezers

Static Upright Freezer Models: FFU09, FFU12, FFU14, FFU17, FFU21, FFU21 (Hot Gas) Have A New Powder-Coated Two Piece Evaporator Assembly.

The New Style Evaporator Is Fabricated As A Continuous Tube And Wire Assembly And The Heat Exchanger Is Soldered To It. The Entire Assembly Is Then Powder-Coated White and Shipped As A Complete Assembly.

We Have Set Kits Up By Unit Size. You Can Not Buy The Shelves Separate Any More; They Will Come with the White Painted Evaporator Shelves and Heat Exchanger Attached.

Evaporator Kits with Heat Exchanger

Model Size	Part Number	Model Size	Part Number
U21	216939800	U09	216940200
U17	216939900	B12 FMR MODEL- EDINA TECH	216940400
U14	216940000	U21 WITH HOT GAS	216940300
U12	216940100		

This Is a Closer Description So You Can Relate To Frigidaire Models

Freezer

Model	Part Number	Model	Part Number
FFU09	216940200	FFU17	216939900
FFU12	216940100	FFU21	216939800
FFU14	216940000	FFU21 (Hot Gas)	216940300

Note: Some distributors may still have the evap shelves in stock, but advise them to use these kits because if the Distributor doesn't have all of them the others may not be available.

Evaporator with Heat Exchanger for Frost Free Upright Freezers

We Have An Evaporator Kit With The Heat Exchanger Already Attached That Can Be Used On Any U17, U20, And U21 Frost Free Upright Freezer Models. The U21 Models Are A Sears Models. (Example U20 Is FFU 20).

PART NUMBER

1. 216838800 Evaporator Kit

- 8 1/4" Evaporator Kit W/Heat Exchanger for Models with Serial Numbers Starting with and after WB129XXXX.

2. 216831400 Evaporator Kit

- 10" Evaporator Kit W/Heat Exchanger for Models with Serial Numbers Prior to WB124XXXX.

Note: Evaporator Kits For Freezers With Serial Numbers In Between The Two Serial Numbers Above Should Be Verified By Measuring. The Way You Measure Is From The Top Of The Fin To The Bottom Fin.

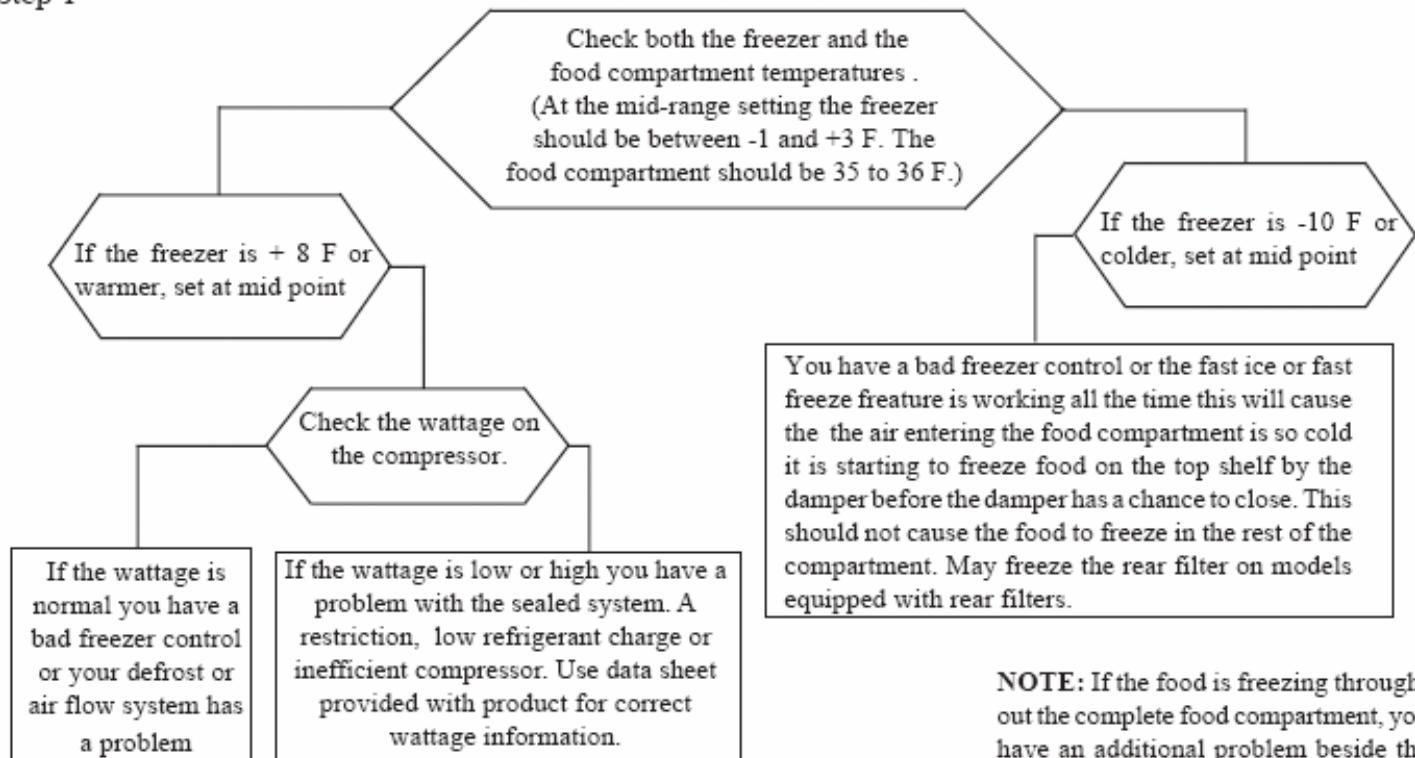
SXS refrigerator information

PROBLEM: Freezing food in food compartment on Standard Side by side Refrigerators.

CAUSE: There are a number of problems that can result in freezing of food in the food compartment (or having warm food compartment temperatures).

SOLUTION: The freezer temperature should be in the -1 to +3F range (factory mid range setting) and the food compartment should be +36 to +38 F (factory mid range setting). When checking the refrigerator use the information below as a guide to insure you cover all the possible causes of food freezing in the food compartment or the water filter freezing.

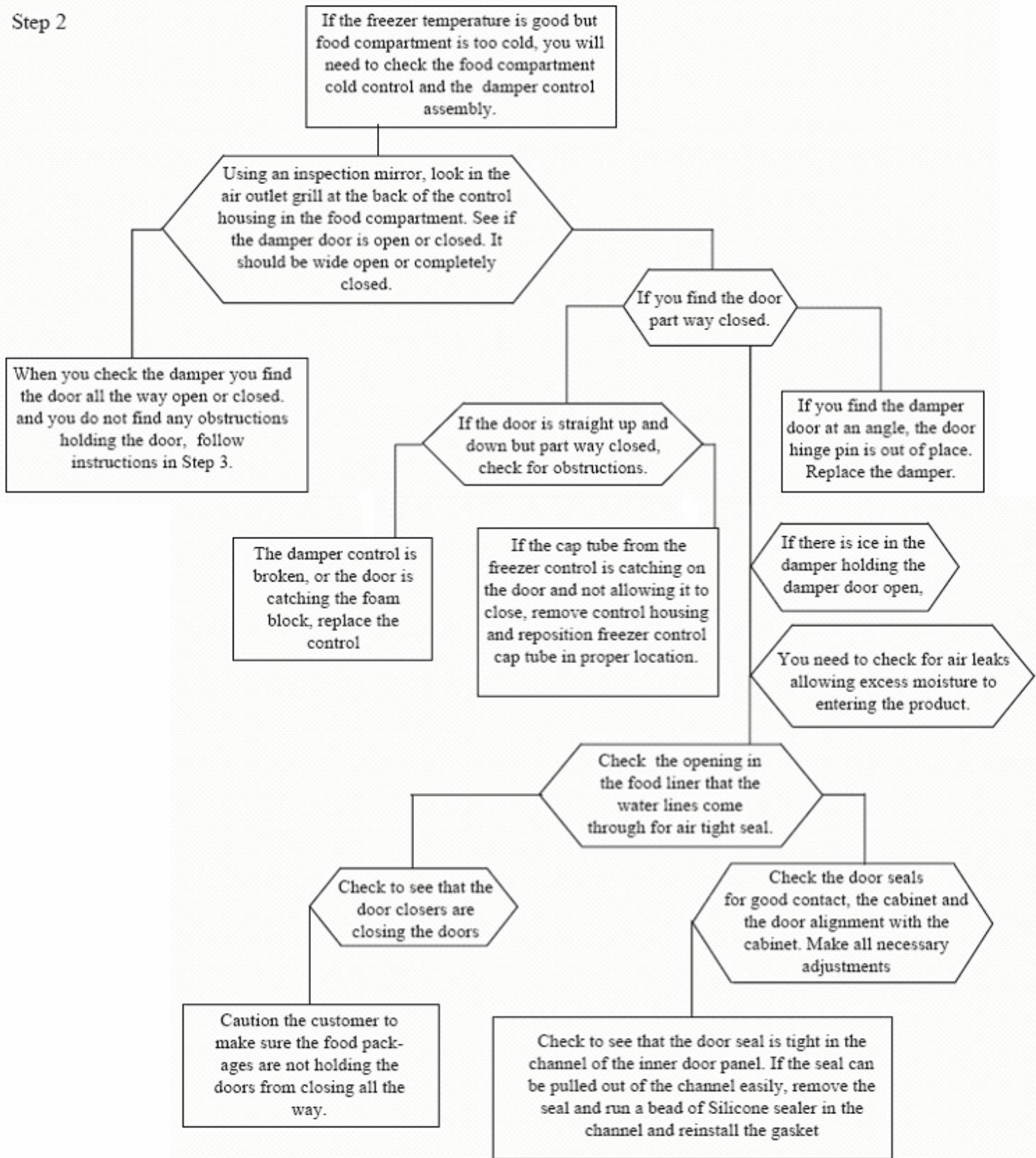
Step 1



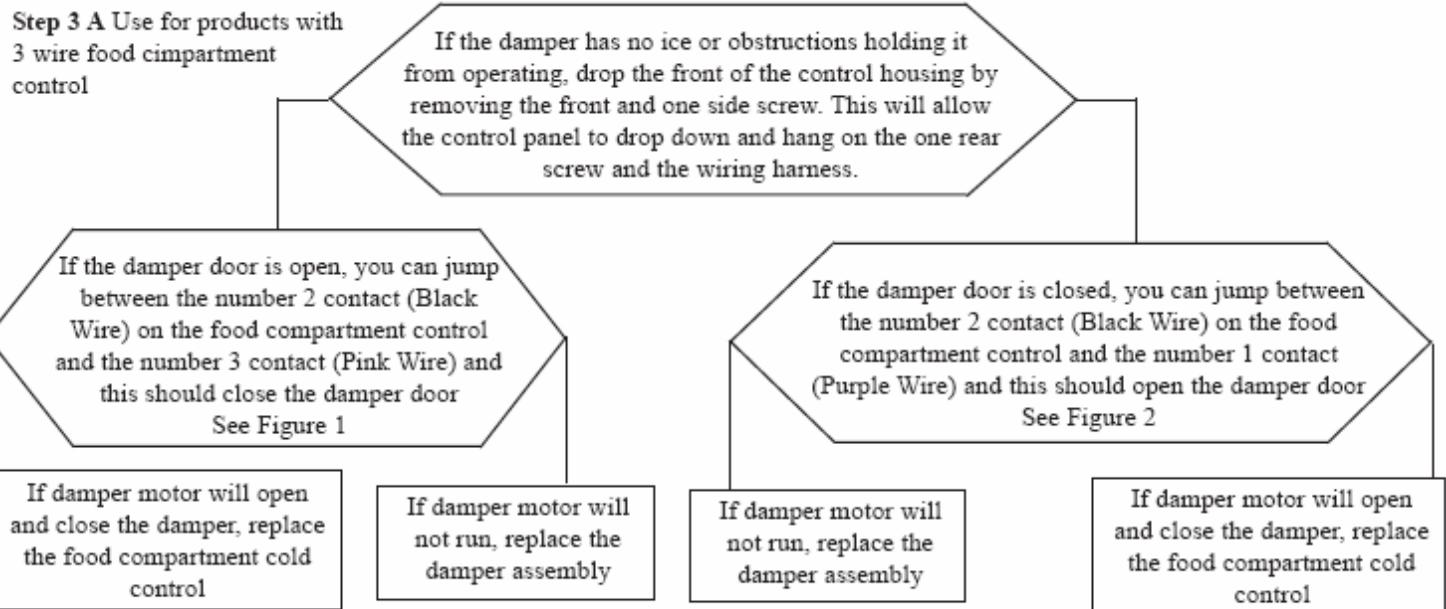
NOTE: Keep in mind the temperature of the air coming through the damper must be +15 F at the mid range to close the damper. If the air temperature is 18 F the damper will not close but the food in the food compartment will freeze.

NOTE: If the food is freezing throughout the complete food compartment, you have an additional problem beside the freezer control and will need to follow the instruction for checking the food compartment control system.

Step 2



NOTE: If there is ice in the damper door holding the damper door open, we have an excess amount of moisture entering the product and it is not all condensing on the evaporator coil. When the circulating air still contains a large amount of moisture as it turns to go though the damper, it will slow down and this will allow the moisture to condense on the damper door. The moisture will then run down and freeze on the bottom of the housing.



Step 3 B If the product has a 2 wire food compartment cold control you can operate the damper door by turning the food compartment control to off to close the damper door and turning it back on to open the door.

Refrigerator Questions & Answers

Q. Is the new Servo side mount icemaker different from the Mid-South side mount icemaker?

A. Yes, but only in the manual harvesting cycle. The Mid-South icemaker is manually cycled by pulling on the ejector fingers. To manually harvest the Servo icemaker, pull the front cover off the icemaker and turn the motor gear counterclockwise very slowly. The Servo I/M doesn't have a slip mechanism that allows you to advance the ejector fingers like the Mid-South I/M does. You can tell the difference because the Servo I/M has a white control housing.

Q. Frost in crush cube solenoid

A. Remove foam block, dry solenoid, apply thin coat silicone grease to plunger. Replace cover with new number. Seal water lines behind crispers. Check chute door. Seal any air leaks.

Q. What are the different IM kit numbers?

A.

ICE MAKER KITS

218734400: IM34 add-on icemaker kit fits most frost-free static condenser models from 1981 to 2000.

218736300: IM5 add-on icemaker kit fits all force air condenser models from 1992 to 2000.

IM115: Add-on icemaker kit fits next generation models produced after 2000.

IM220: Similar to IM115, but used in export 220V models.

ICE MAKERS

5303918277: Replaces only the icemaker for models using IM115, 218734400, 218736300, and models using factory-installed similar icemakers. Does not include valve and installation parts.

241696501: Replaces only the icemaker for counter-depth refrigerators. Mounts sideways in the rear of the freezer. No installation parts included.

240352409: Direct replacement for next generation standard depth models with factory installed icemakers. Icemaker only; *no installation parts*.

NLA

R000191707: Old plastic ice-tray style icemaker for 22 cubic foot models with ice and water through the door.

R000174502: Old plastic ice-tray style icemaker for 24 cubic foot models with ice and water through the door.

Q. Defrosted and re-started.

A. Check compressor amp draw to specs. Jump orange and red at Adaptive Defrost Control, if amps drop change Adaptive Defrost Control. If amps high, check amps with test cord, if high tap system and check for restriction if on restriction is present change compressor.

Q. Water will not dispense at door. Have water at lower hinge.

A. Check freezer pkg. temperature. if it is lower than -6 F check control system. If the temperature is between -5 and +5 F Replace door.

Q. No or low VAC at primary water valve.

A. Should have 48 to 58 VAC at primary coil. check voltage at secondary valve it should be 115 v at yellow for the dispenser or 95 to 105 at green coil for ice maker. If voltage is correct at secondary but not the primary Replace diodes.. If voltage is not correct at the secondary also check out the refrigerator electrical system dispense and/or ice maker.

Q. Fresh food warm, freezer OK.

A. Fresh food CC should be closed. Check damper it should be open. if damper is open make sure the evaporator fan is running. If fan is OK, check defrost. Make sure lights goes out when door is closed. Check for air leaks.

Q. No power to evaporator motor

A. Check Adaptive Defrost Control. (Defrost limit some serial numbers) check lower control board. (Counter Depth uses a 12 VDC fan motor the rest of the product line has a 115 V AC fan motor

Q. No voltage to compressor.

A. On electrical mechanical models, Check voltage at the adaptive defrost control light blue to orange and light blue to red. Replace failed component.

On Genesis models, check voltage at the control light blue to red. Replace failed component.

On counter depth models, check voltage at the lower control board blue to red on standard compressor models. On VCC Models, check for 3 to 5 V DC going from the lower control board to the inverter. Check for 115 V AC going into the inverter from the service cord. Replace failed component.

Fully Integrated Direct Feed Model Dishwashers



PLD4555RFC

Figure 1

The Design and Operation of the Fully Intergraded Dishwasher.

The fully integrated control places all cycle selection and options on top of the console out of sight with the door closed. With the controls under the counter top while in operation, the cycle selection needs to be accomplished with the door opened. First select a wash cycle and any options, then press the Start/Cancel pad or a Delayed Start pad and close the door the cycle begins. A display mounted in the front of the console shows the time remaining of the delay or the time remaining in the cycle. While in operation, the dishwasher control monitors the progress of the cycle to determine if changes need to be made to improve the cycle performance. Changes to the cycle can start as early as the first fill, if food soils in the water deems it necessary. If the user wishes to make a change to the cycle, it needs to be done before the completion of the first fill. After that time any changes to a wash cycle will require a Cancel/Drain before a new wash cycle can be selected. While in operation, the control monitors all aspects of the cycle with the use of sensors mounted in the sump. These sensors enable the control to adjust the length of the cycle based on soil level and water temperature and are made as needed.

As stated earlier, a wash cycle can not be changed after the first fill without a Cancel/Drain, options to the wash cycle can be changed at any time up to the point they are to be applied. If at any time after the cycle has been started, the door is opened the unit will stop, by closing the door the operations will resume without pressing the Start/Cancel pad. If a cycle needs to be terminated after the first fill has started touching the Start/Cancel pad once sends the unit into a Cancel/Drain for 90 seconds, this terminates this selection. If while in a Cancel/Drain the Start/Cancel pad is pressed a second time the drain action stops immediately. At the completion of a wash cycle the control lights the Clean indicator; this indicator remains on until the door is opened. After the wash cycle is completed and the door opened when the Start/Cancel pad is pressed for a new load the control will repeat the previous run cycle, including all of the previously selected options.

Added to the fully integrated control, the new design offers, a new control console which is decreased in height. The vent and door latch release handle that had added to the height have been redesigned. The towel bar handle once decoration now becomes the door opening handle.

PLD4555RFC This is a 5 speed Professional model with 6 wash cycles and a Rinse only cycle. This model has preprogrammed wash pressure, water temperatures, and dry options for each of the 6 different wash cycles. The user has the option to change these setting to accommodate their desires. See Figure 1

PLD4375RFC This is a 3 speed Professional model with 6 wash cycles and a Rinse only cycle. This model has preprogrammed wash pressure, water temperatures, and dry options for each of the 6 different wash cycles.

LEDB500FEE This is a 5 speed Elements model with 5 wash cycles, a Favorite cycle, and a Rinse only cycle. This model has preprogrammed settings for motor speed, water temperature and dry for each of the wash cycles with the option to change these if the user wishes. The Favorite Cycle selection allows the user to program a wash cycle with any options to their liking, then hold this cycle in memory by pressing one pad the designed cycle is repeated.

Cycle Selections



PLD4555RFC



PLD4375RFC



LEDB500FEE

Figure 2

To better understand these different wash cycles the following are each cycle, the settings and what options are available.

Ultimate Scrub

This cycle is used for heavily soiled dishes. The control automatically selects the High speed for the wash motor, an assured water temperature of 140° in the main wash and 155° in the final rinse, and dry is a default to Sahara. All of the options are available and soil sensing will be used.

Maxx Clean

This cycle is used for heavily soiled dishes. The control automatically selects the Maxx wash speed for the wash motor, an assured water temperature of 140° in the main wash, 155° in the final rinse, and dry is default to Maxx. All of the options are available and soil sensing will be used.

Speed Clean

This cycle is used for a small dish load or lightly soiled. The control automatically selects a High / Maxx wash speed on the wash motor, an assured water temperature of 125° in the main wash and 128° in the final rinse. Only the Dry Option and Delay Start options are available. Soil sensing is used.

Normal Wash

This cycle is for normally soiled dishes. The control automatically selects the Normal speed for the wash motor, an assured water temperature of 135° in the main wash and 140° in the final rinse. All of the options are available and soil sensing will be used.

China/Crystal

This cycle is for delicate crystal or china. The control automatically selects the Delicate speed for the wash motor, an assured water temperature of 130° in both the main wash and the final rinse. Only the Air Dry and the Delay Start options are available. Soil sensing will not be used.

Eco Wash

This cycle is for lightly soiled dishes. The control automatically selects the Normal speed for the wash motor, an assured water temperature of 135° in the main wash and 140° in the final rinse. All Wash Pressures, Dry Options, and Delay Start options are available. The Wash Temperature option is not available and soil sensing will not be used.

Top Rack, Glasses, or Party Glasses

This cycle is used for small loads of glassware or cups. The control automatically selects the Normal speed for the wash motor only an assured water temperature of 135° is set for the final rinse. The water temperature options, dry options, and Delay Start are available. Soil sensing will not be used.

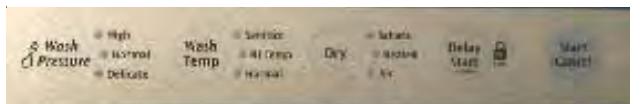
Rinse Only

This cycle is intended to rinse dishes that will be washed at a later time. There are no options available with the exception of a Delay Start.

Favorite Cycle

This is a cycle programmed by the user and gives them a short cut to a cycle they use frequently. To program the Favorite Cycle make the selection of a wash cycle and all of the desired options, press and hold the Favorite Cycle pad for three seconds. Once the Favorite Cycle has been set the following indicators will flash Time remaining, Favorite Cycle, the user's selected cycle and all options selected. These lights will flash for 2 seconds. The Favorite cycle can now be set as a wash cycle with the Start/ Cancel pad.

Option Selections



PLD4555RFC



PLD4375RFC



LEDB500FEE

Figure 3

Option selections allow the user flexibility to alter a wash cycle to their desires. These options are the speed of the wash motor this will increase water pressure sprayed on the load, the temperature of water in both the main wash and final rinse segment of a cycle, the dry can be a no heat dry or on some models the heated dry can actually be extended for a longer time. This section covers these and a delay start option.

Wash Pressure

This option allows the user to raise or lower the speed of the wash motor which increases or decreases the pressure of the water used to clean the dishes. The control will not allow this change in all cycles because of the intent of the cycle. This change in water pressure will effect all of the washes and rinses in this selected cycle.

Depending on model, the option could read either **"High"** or **"Maxx"** speed. This selection will substitute the speed of the motor to 3400 rpm when spraying from the lower spray arm and 3200 rpm from the upper and center arms. This overrides the variable speed function of the selected cycle.

Delicate Pressure limits all wash and rinse speeds to 2800 rpm only for the selected cycle.

Wash Temperature

This option allows for the selection of a high temperature wash in select cycles. The high temperature wash occurs at the end of the main wash segment of the cycle.

The display will flash an HO on models so equipped. This option will increase the water temperature to 140°. There is a time override for this option of not more than 10 minutes.

Sanitize Rinse

The Sanitize rinse increases the final rinse segment to a temperature of 155° on select wash cycles. On models PLD4555RFC and LRDB500FEE when the sanitize rinse option is selected this selects the High Temp wash as well, for that reason, both the Sanitize and Hi temp wash indicators will light. On other models, this is a separate option. There can be up to 30 minutes delay for the Sanitize rinse when selected. On models with a display, an HO will flash during this delay period. Once the wash cycle is completed, the Sanitize light and the Clean light are lit and remain on until the door is opened. If the 155° was not reached in the allotted time, the Sanitize light will not come on informing the user the criteria for this setting was not met.

Dry

This option, on all models, can disable the heating element which gives only an air dry. There is an active vent and fan assembly located in the top right back corner of the tub that will be activated at the end of all wash cycles. On select models, the **Dry** option also offers a Max or a Sahara dry, this setting lengthens the dry cycle by 20 minutes to insure a dry load. If when the dishwasher is in the dry cycle the door is opened and stays open for more than one minute the remainder of the dry cycle will cancel out.

Delay Start

This option allows for a wash cycle to be programmed into the control and the start delayed for a set number of hours. A cycle can be delayed from 1 to 24 hours in 1 hour increments. To set a Delay Start a wash cycle with options is selected followed by pressing the Delay Start pad. Each time the Delay Start pad is pressed in 3 second intervals the number of hours to delay will increase by one hour up to 24 hours. Once the delay begins, time is decreased in one hour segments until one hour remains, then the count down changes to minutes. After the count down starts pressing the Start/Cancel pad will have no effect on the delay start, if the Start/Cancel pad is pressed a second time in succession this will cancel the delay and start the selected cycle.

Control Lock

The control lock disables the keypad so that the settings entered into the control can not be changed. To activate the control lock press and hold the Delay Start pad for 3 seconds with the dishwasher door closed. The Control Lock indicator will illuminate when the lock is set. To remove the control lock press and hold the Delay Start pad for 3 seconds until the light goes out. If the control lock is used, it should be turned off after the cycle is completed and before the door is opened.

If the control lock was used and not turned off before the dishwasher door is opened the light will go out with the control still locked, resulting in a non functioning dishwasher. This can be corrected by removing power from the unit this will reset the control.

Digital Display

The digital display is to indicate the current status of the cycle. The display is a two digit display so time will read from 1 to 99 minutes. If a cycle length is over 99 minutes, the display will have a plus sign (+) to the right of the numbers. This plus sign (+) will stay light until the cycle time drops below 99 minutes. The display may also have codes appear to indicate the status of the cycle or the condition of the dishwasher. The most common of these codes is an HO code which may appear and flash in the display this indicates that the control has delayed the cycle to increase the water temperature. Another of these codes is a flashing CL indicates of an open door. This code can appear if the control is programmed and the Start/Cancel pad is pressed before the door is closed. Close the door and the cycle will start. The last of the common codes is a PF code. This will flash in the display on initial power up of the dishwasher or any time power to the dishwasher has been interrupted. There are fault codes that can appear in the display as well; these will be listed as failure codes in the control test section of this manual.

Status Indicators

The **WASHING** indicator is energized at the beginning of any wash cycle and will remain on as long as the vent actuator is not energized.

The **DRYING** indicator is energized when the vent actuator is energized and remains on until the end of the cycle regardless of which drying option is selected.

The **CLEAN** indicator is energized at the end of all wash cycles with the exception of a Rinse and hold cycle. The clean indicator will remain on until the door is opened. After the door is open, ALL indicators will be extinguished with the exception of the "Rinse aid low" if applicable.

The **SANITIZE** indicator is shown in the front display as an "S" and will be energized at the end of any cycle that the Santi option has been selected. The sanitize criteria must be completed correctly for this indicator to come on. This indicator will be extinguished when the door is opened.

The **Rinse Agent LOW** indicator on the keypad will be on any time the rinse aid level in the dispenser is low. This light will stay on until the dispenser is filled. The indicator can also be extinguished after 5 successive cycles have been run with out filling the dispenser. On select models an Lo will appear in the front display to indicate the rinse aid dispenser is low on agent.

Wash System

The wash system consists of wash pump and motor assembly to provide water under pressure for the three spray arms used to clean the dishes. These three spray arms will alternate operation starting with the lower spray arm. After a predetermined time the spray will change to the center and upper spray arms simultaneously.



Figure 4

Below the lower spray arm is the filter and soil director this covers the complete sump. The filter is intended to block loosened food particles from entering the wash sump area as they fall to the bottom from the spray action. See Figure 4

On the underside of the filter is a soil director which directs the loosened food particles to the lower left side of the sump to a stainless steel food macerator used to pulverize the soil so it can pass through the drain hose. See Figure 5



Figure 5

The remaining parts in the wash system are the sump assembly that acts as a reservoir for clean water being supplied to the wash pump and the delivery tube to supply water to the upper two spray arms.

The Alternating Wash System

This wash system is designed to spray from only one arm or one set of arms at a time. The advantage of this is that it reduces the amount of water needed in the tub. The way this system operates is explained as follows.

Alternating the spray is achieved with a check ball moving between two holes in the sump. One hole is located in the rear of the sump used to supply water to the upper two spray arms; the second is located out the top of the volute cover onto which is mounted the lower spray arm.



Ball covering back hole

Figure 6



Figure 7

The check ball rests at the end of a ramp molded into the sump partially blocking the rear hole. As water under pressure enters the volute cover, the check ball is held tightly into the rear hole restricting water flow from this opening. Water can only leave the remaining hole from the top of the volute cover into the lower spray arm. See Figure 7

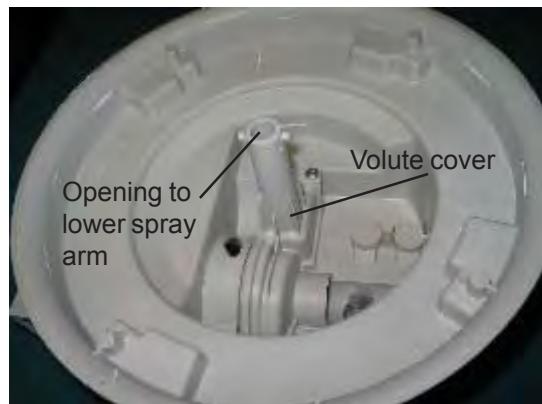


Figure 8

The force of the water entering and leaving the arm causes it to turn by the positioning of the hole in the spray arm. The rear hole which is molded in the sump has a small section removed above where the check ball sets, this section allows a small amount of water to bypass the check ball and enter the delivery tube mounted up the out side rear of the tub. Water bypassing the check ball will fill the delivery tube at a rate of approximately four inches a second. This water will be used to change the spray from bottom to the upper two spray arms. All wash and rinse cycles will start by spraying from the lower wash arm. Changing spray from bottom to upper spray arms is accomplished with the control stopping the wash pump for not more than .6 of a second. This pause removes water pressure from the rear of the check ball, water that had accumulated in the delivery tube now reenter the sump, which moves the check ball away from the hole and up the ramp.

The pump restarts the water pressure in back of the ball forces the check ball up into the top hole in the volute cover blocking water to the lower spray arm. Water exits the rear hole into the delivery tube supplying water to the upper spray arms.



Figure 9

Water in the delivery tube is divided with 80% going to the center spray arm and 20% to the upper arm. Water spray will continue from the upper spray arms, after a predetermined time the control will again pause the pump this time the pause will be for 3 seconds. This longer time allows for the delivery tube to completely drain then the check ball returns to the bottom of the ramp. The pump restarts with spray from the lower spray arm completing a spray arm change cycle.

Parts in the wash System

Wash Pump

These model dishwashers use a variable speed DC motor. The variable speed motor is used to improve cleaning by varying the water pressure depending on the cycle selected. An Ultimate Scrub and Maxx cycle intended for heavily soiled dishes will have a high pressure speed to better remove baked on food where a China/Crystal cycle, for very delicate items will have a very low water pressure setting. The user has an option to change the motor speed on some models. There is an added advantage of quieter operation when the lower speed is used. The motor and wash pump are supplied as a one piece assembly.



Figure 10

The speed of the motor is determined by the electronic control based on the cycle selected. The control continually monitors motor speed with input from a Hall Effect sensor mounted to the rear of the wash motor. Input voltage for operating the motor will be 120VAC with the motor changing this to VDC with a built-in rectifier.

Stainless Steel Filter

The stainless steel filter covers the entire sump area. The filter is intended to remove all food particles from the water so only clean water reenters the sump. There is a fine mesh polyester screen housing in the center of the stainless steel filter to house a lift out basket to catch larger items, this basket can be removed for cleaning. On the bottom of the inner screen housing there is a soil director used to direct food soil removed from the dishes to the left side of the sump to be removed first when the water is drained from the tub. The lower spray arm support is also used as a lock for the filter to insure it is down tight to the sump. See figure 11



Figure 11

Lower Spray Arm

This spray arm is designed using three spray arms to spray water up into the lower rack. There are also on the underside of this spray arms 4 legs used for cleaning the soil from the stainless steel filter. Three of the legs have spray openings pointed toward the center these will spray water across the top of the filter forcing the loosen soil to the center. The forth leg is mounted closer to the center of the spray arm, with a spray opening pointed straight down forces food collected in the center basket down into the soil director for removal in the drain segment of the wash cycles. Turning of the arm is accomplished by water under pressured sprayed from holes molded on top of the arm these force the arm to turn in a clockwise direction. The lower spray arm turns periodically in all cycles, this to keep the filter clean, and reduce chances of redeposit. See Figure 12



Figure 12

Center Spray arm

This spray arm is mounted on a short delivery tube to the under side of the upper rack. This arm rotates clockwise at approximately 20 rpm. The center spray arm and delivery tube will move in and out with the upper rack. There is a bellows mounted to the back end of this short delivery tube which forms a seal against the back wall of the tub when the spray arm is in operation. This delivery tube is also designed for the adjustable upper rack. See Figure 13



Figure 13

Upper Spray arm

This arm is located in the top of the tub and turns in a counter clockwise direction, and sprays simultaneously with the center spray arm. The mount for the upper spray arm serves as the lock nut for the delivery tube and is only available as an assembly. The spray arm will turn at approximately 40 rpm. See Figure 14



Figure 14

Drain Pump

The only function of the drain pump is to remove water from the dishwasher. The drain pump is mounted directly to the front of the sump. The motor for this pump is rated a 1/25th hp drive motor. The drain pump only comes as an assembly. The front cover of the pump can be removed for cleaning if needed.



Figure 15

With the drain pump mounted in this location it is accessible by removing both the outer door and the toe kick panels. The drain pump connector hose from the pump to the sump are supplied as an assembly. See Figure 15

Drying System

The Drying system consists of a Fan/Vent assembly, Heater, and Air Baffles. The way the systems performs is; as the dry portion of a wash cycle is reached the control activates the heater, if selected, and opens the vent door, located in the top right rear of tub, this allows the vent fan to draw in outside air resulting in hot air being forced out the bottom of the outer door panel. See Figure 16



Figure 16

Fan/Vent assembly



Figure 17

Fan/Vent assembly located top right rear of tub. The vent door, normally closed, is opened by a 12 VDC solenoid also mounted in the assembly. There is an optical sensor to indicate to the dishwasher control that the vent door is properly closed until it is to be opened. See Figure 17 & 20

If for any reason this door is not closed, the control will attempt to close the door 5 times if it continues to fail a failure code will appear in the display. The dishwasher will not operate until this condition is corrected.

12 VDC solenoid

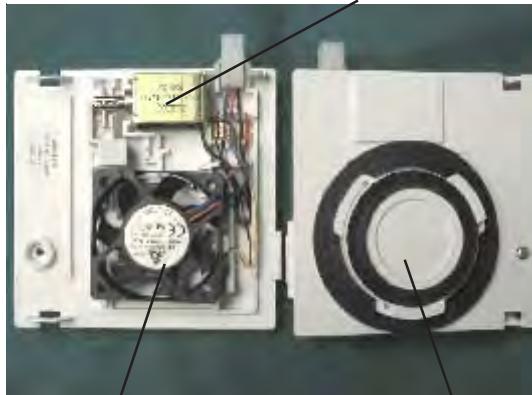


Figure 18
vent fan optical sensor vent door

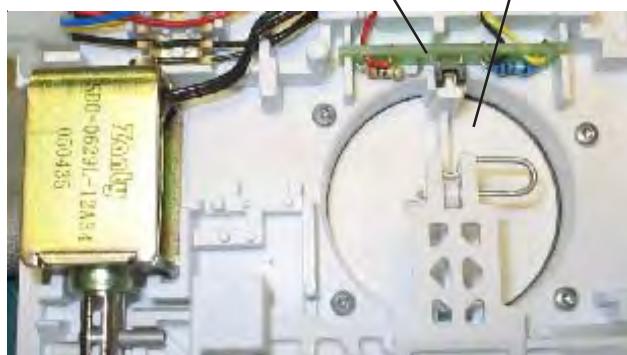


Figure 19

The vent fan starts as soon as the vent door is opened and turns at 3500rpm. The motor is powered by 12 VDC with a frequency generator to indicate to the control fan speed. If for any reason the Fan/Vent assembly would get disconnected, a failure code will appear in the display on the front of the door and the dishwasher will completely shut down. The dishwasher will not function without this assembly.



Figure 20

Heater

The heater mounted in the bottom of the tub increases water temperature, then in the dry cycle assist in drying the dishes. See Figure 21 The amperage draw of the heater can vary depending on the job it is to perform. When heating water, the amperage draw can be 900 watts. This amperage will drop to approximately 700 watts in the dry cycle. The design of the heater is to be more energy efficient. Mounted next to the heater on the under side of the tub is a safety thermostat. This thermostat will open if the temperature in the tub raises over 200°F. See Figure 22



Figure 21



Figure 22

Door baffles

Baffles have been installed into the bottom of the inner door panel to direct hot air out of the dishwasher. Foam baffle is mounted to the outside bottom of the inner door panel to keep steam and air from rising into the door. This foam baffle must not be removed. See Figure 23

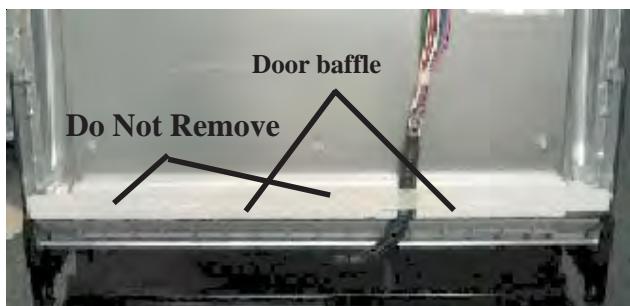


Figure 23

Dispensing System

The detergent and rinse aid dispenser consists of two dispensers combined in one housing and are controlled with one wax motor actuator. The first time the control energizes the actuator the cover over the detergent side of the dispenser opens dispensing detergent for the main wash cycle. The second time the actuator is energized rinse aid is released for the final rinse cycle. The detergent side of the dispenser consists of two cups: the smaller cup is for detergent used in the pre-wash cycle, the second larger cup is for the main wash section of the cycle. The rinse aid section contains a reservoir that will hold enough rinse aid for many applications. See figure 24 This reservoir has an indicator that will be clean if rinse aid needs to be added. A reed switch has been added to the rinse aid dispenser that informs the control when the rinse agent is low the control then displays and LO in the display to inform consumer of this condition. There is also an adjustable hub inside the dispenser, seen by removing the cap, to control the amount of agent dispensed. This detergent and rinse aid dispenser is replaced as a complete assembly. The cap for the rinse aid dispenser is the only part available for this dispenser.



Figure 24

Dispenser Operation

The dispenser has two detergent cups both covered by the same cover. In the bottom center of the spring loaded cover is a thumb release. By pushing up on this release, the cover will open. The larger of the two cups, under the cover, is used for the main wash cycle the smaller for the pre-wash. With the detergent added the cover is closed. The cover is slotted so the detergent from the smaller pre-wash cup can be washed out without the cover opening.

After the fill in the main wash, the control applies power to the wax motor actuator. The plunger of the wax motor extends pressing down on a pivot arm attached to the latch for the cover, this releases the cover to dispense the detergent. On the opposite end of this pivot arm is a pin that rides up in the actuating arm for the rinse aid dispenser. Once power has been removed from the wax motor, the plunger retracts the pin riding in the rinse aid actuator follows a track down the back side of the actuator. The dispenser is now ready to dispense the rinse aid. The control again applies power to the wax motor the pivot arm raises the rinse aid actuator to release rinse aid into the dishwasher. When power is removed from the wax motor the pivot arm falls and a leaf spring mounted to the side on the dispenser forces the actuator arm to the starting position for the next cycle.

Door latch assembly

The door latch assembly performs two functions: first to close and latch the door to the tub, second is to actuate both of the door safety switches to insure the door is closed before the dishwasher can be operated. The latch mechanism is mounted to the inside door panel with a lock tab at the bottom of the latch body and two location pins on the back then secured with two screws. As the door is closed the strike mounted to the top of the tub presses in on the locking cam and rotates it forward this raises a lock into the center opening of the strike. As the cam in the latch is pressed forward it releases the door switch actuator closing both switches. See Figure 25. The handle mounted to the outer door panel is used to open and close the door.

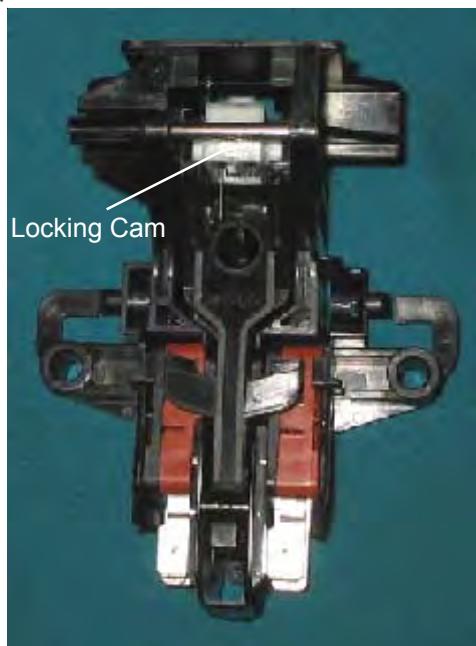


Figure 25

Fill system

The fill system of this dishwasher consists of the water fill valve and a float safety switch. Power from the control is applied to the water fill valve through the float safety. The water valve is an electrically operated shut off valve with a flow washer that regulates the amount of water based on the water pressure applied to the valve inlet. Water pressure needs to be between 20 and 120 psi for the dishwasher to have the proper amount of water for operation. See Figure 26



Figure 26

The float safety switch will shut off power to the valve if the tub over fills with water. Water enters the tub through an air gap mounted to the left side of the tub. See Figure 27



Figure 27

Door Hinge and Spring

The inner door panel is attached to the tub frame by hinges. On the face of both hinges there are fiber pads that act as breaks to hold the door at any angle, these pads do not interfere with the smooth up and down movement of the door. There are door springs and cables on both hinges to assist in opening and closing the door. The door spring, which is attached to the rear frame, has a cable that passes around a friction bearing before attaching to the door hinge. This spring and cable assembly provides a quieter, smoother, operating door. See Figure 28

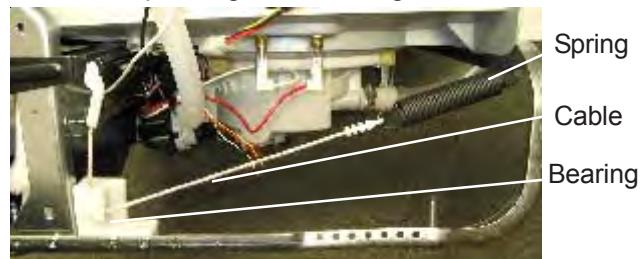


Figure 28

The Control System

The electronic control, with input from various sensors, has total operation of the dishwasher once a wash cycle has been started. The electronic control is mounted inside the console with its power coming directly from the power junction box. Power to operate the control can not be interrupted by opening or closing the door. However, the control does know when the door is opened. The black power lead from the door switch is attached to the control this line operates all of the components in the dishwasher. Input to the control comes from the following: the **keypad** is a membrane switch that allows the user to select a specific wash cycle and any available option for the dishwasher to perform, a **soil sensor** that determines the concentration of soil in the water, a **thermistor** to measure the temperature of the water, a **Hall sensor** to track the speed of the motor, an **optical sensor** reports the position of the vent door, finally a **reed switch** in the rinse aid dispenser to report the presence of rinse aid in the dispenser. This section will describe the sensors how they operate followed by tests that can be performed to test the control system and all of the components in the dishwasher.

Soil Sensing

A soil sensor is used by the control to make adjustments to length of wash cycles based on the soil level found in the water. This sensor is located in the base of the sump directly in front of the wash motor intake. The soil sensor receives a voltage signal from the control which it converts into a small beam of light; the transmitter then directs this light beam to a receiver through water that has been used to pre-wash the load in the unit. As the light passes through the water the density of the water can reduce the strength of the light beam reaching the receiver. The receiver turns the light back to a voltage this is then returned to the control, which interprets this reading and adjusts the cycle length accordingly. See Figure 29

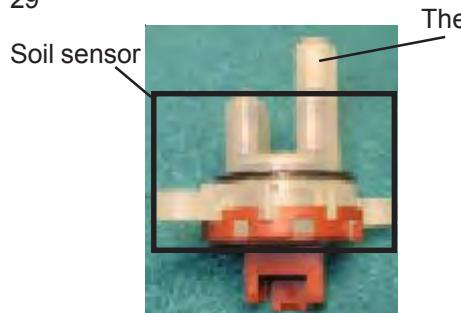


Figure 29

The number of times the control checks the soil level varies with cycle but in cycles it is used the pre-wash water will always be checked. The control can increase a cycle length or decrease as needed but never longer than the longest cycle or shorter than the shortest cycle available.

The control pauses the wash motor for 30 seconds to allow time for the water to settle before checking then the water is drained and any adjustments to the cycle are made.

Temperature controls

The control is programmed with preset wash and rinse temperatures for each cycle. The use of a thermistor in the sump provides water temperature information to the control to maintain these temperatures. The control provides options for the user to select a higher temperature wash as well as a sanitize rinse.

The thermistor is located in the same housing as the Soil Sensor. The post on the Soil Sensor that is taller is the location of the Thermistor. With the sensor in the water of the sump it gets a more accurate reading of water temperature. See Figure 29

To insure the pre-programmed water temperature for the wash cycle is reached the control can pause the main wash cycle up to 10 minutes in a Temp assure cycle. This Temp assure cycle is automatic and not selected as an option. If the Hi-temp wash option is selected, the control will delay the main wash section once again for up to 10 minutes to increase the water temperature to a higher degree. Whether or not the water temperature is reached in this 10 minutes delay, the cycle will continue without indication that it reached or did not reach this temperature.

When the Sanitize option is chosen, the National Sanitation Foundation requires in the final rinse cycle that 155°F be reached and maintained for a certain amount of time. During the final rinse, the control pauses the time remaining for up to 30 minutes to reach this 155°F temperature before proceeding to the end of the cycle. Should the cycle meet the requirements defined for the sanitize option, the Sanitize light will come on and stay on until the door is opened. If the requirements are not met the sanitize light will not come on at the end of the cycle.

Service Tests

The control has a number of tests that have been programmed into its memory most of these are for manufacturing purposes and are not useful for field service. At times, if certain pad combinations are pressed, different codes may appear in the display that are unknown or not listed, what needs to be done is disconnect power to the unit then reconnect. You can then continue with servicing the dishwasher.

The control has service tests programmed into it that can be of assistance to the service technician in diagnosing control and component problems with this unit. These tests are; The Water /Service Test, Water Temperature Test Mode, and The Relay/Triac and Sensor Test.

To insure the correct pad is pressed to enter and use these tests the pad locations will be numbered 1 through 11 with pad # 1 being the pad furthest to the left and pad # 11 the furthest to the right. In all cases the pad to the right will always be the Start/Cancel pad.

Water Temperature Test

This test will allow the service technician to check the temperature of the water in the sump of the dishwasher while at idle or while it is in operation. The temperature of the water will show in the display using the last two numbers in the degrees. On temperature over two numbers the display will read the last two numbers in the temperature and a plus (+) sign, an example of this is the water in the sump is 120° will read 20+ in the display.

To active the Water temperature test

With the dishwasher in idle press and hold the Normal wash and the Start/Cancel pads simultaneously for 3 seconds the temperature will be shown in the display. To terminate this test press and hold the Normal wash and the Start/Cancel pads again for 3 seconds.

With the dishwasher in operation, press the cycle selection pad of the cycle that is in operation and hold in for 3 seconds the temperature will be displayed. The temperature will stay in the display and update every 3 seconds. To terminate this test press and hold the same cycle selection pad used to start the test.

Water/Service Test

In the Water/Service Test, the control will step through each function of the product and operate each component before ending and illuminating the CLEAN and SANITIZE LED's. Along with checking the operating components the control will check all of the input sensors as the test progresses, if at any time a failure in one of these sensors is detected, the test will stop and a failure code will be displayed.

To Start the Test

From an idle condition, this is with no programs entered into the control, press pad # 9 and the START/CANCEL (pad # 11) simultaneously for three seconds. You will know that the test has started by the water valve being activated and the Washing and Sensing LED lighting. The test will automatically advance through the complete test unless the control detects a failure in one of the sensors. The test may be manually advanced by pressing the START/ CANCEL pad (pad # 11). Each time the pad is pressed the cycle is advanced one segment.

To Exit the Water serviceTest

At the end of the test the control lights the CLEAN and SANITIZE LED's. With these indicators light, opening the door will give a PF code in the display the START/CANCEL pad (pad # 11) can now be pressed to clear the test and restart the dishwasher.

Chart For the Water Service Test

DESCRIPTION	Total time, (sec)	Water valve	Circulation motor	Drain Motor	Heater	Dispenser	Fan unit	Washing LED	Rinsing LED	Drying LED	Sanitize LED	Sening LED	Clean LED	Device being monitored	Display Flashes when detection of failure
FILL/DISPENSER	60	1	0	0	0	1	0	1	0	0	0	1	0	fan damper	uo
FILL	27	1	0	0	0	0	0	1	0	0	0	1	0	turbidity	tu
WASH/HEAT (3450rpm)	45	0	1	0	1	0	0	1	0	0	0	1	0	hall sensor	hs
PAUSE	0.4	0	0	0	1	0	0	1	0	0	0	1	0		
WASH/HEAT (2800rpm)	75	0	1	0	1	0	0	0	1	0	0	0	0		
WASH/HEAT/DISP (3450rpm)	60	0	1	0	1	1	0	0	1	0	0	0	0	thermistor	th
DRAIN	90	0	0	1	0	0	1	0	1	0	0	0	0	fan speed	uF
DRY	90	0	0	1	X	0	1	0	0	1	0	0	0	rinse aid	rA
TOTAL	447							0	0	0	1	0	1		

X- denotes a selectable option
SANITIZE and CLEAN LED stay on until door is opened or cycle started.
If the rinse agent is low in the dispenser LO will be displayed in the front display.

Relay/ Triac and Sensor Test

This test allows the servicer to troubleshoot the dishwasher by energizing the different devices of the dishwasher independently from one another. The best way to understand the value of this test for field service technicians is the example of testing the heater for operation. Enter the test followed by pressing pad number 10 on the keypad (see table) this will apply power to the heater. The heater will be powered until the same pad is pressed a second time.

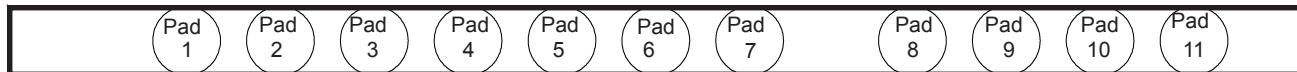
This test can only be entered from a PF (Power Failure) condition. This can be accomplished in two ways. First is to have the power removed from the dishwasher then turned back on this will show a PF in the display and the test can be entered.

The second method to enter this test is to program the control into a Water/Test, at the completion of this test then open the door the control goes into a PF condition now program the Relay/Triac test. By going through the water test you do not have to disconnect power to the unit and the test can be entered rather quickly.

To access this test the unit must be placed in PF condition. While in PF press and hold Pad # 1 and Pad # 7 at which time an "rt" will appear in the display. You can now follow the chart below as to how to select the component to operate. When the test is complete you must again Press Pad # 1 and the Pad # 7 this will return you to PF mode.

Relay/Triac and Sensor Test

To access this test the unit must be placed in PF condition. While in PF press and hold Pad # 1 and Pad # 7 at which time an "rt" will appear in the display. You can now follow the chart below as to how to select the component to operate. When the test is complete you must again Press Pad # 1 and the Pad # 7 this will return you to PF mode.



FUNCTION	PAD TO BE PRESSED	FUCTION PERFORMED	LED ILLUMINATED	IN DISPLAY
Start Test		Ultimate Scrub or Maxx Clean & Rinse Only		"rt"
Active water valve	Pad # 1	water valve on/off	Ultimate Scrub or Maxx Clean	valve on = FL Valve off = rt
Test Variable Speed motor Function #1	Pad # 2 (1 Time)	wash motor @ 2800 rpms	Speed Wash pad	First two digits of motor speed
Test Variable Speed motor Function #2	Pad # 2 (2 Times)	wash motor @ 2950 rpms	Speed Wash pad	First two digits of motor speed
Test Variable Speed motor Function #3	Pad # 2 (3 Times)	wash motor @ 3100 rpms	Speed Wash pad	First two digits of motor speed
Test Variable Speed motor Function #4	Pad # 2 (4 Times)	wash motor @ 3450 rpms	Speed Wash pad	First two digits of motor speed
Stop Variable Speed Test	Pad # 2 (5 Times)	Wash motor off	None	"rt"
Heater on/off	Pad # 10	Heater on/off	No Heat Dry	on = HO off = "rt"
Detergent Dispenser	Pad # 3	dispenser powered	Normal Wash	on = Sd off = "rt"
Rinse aid level	Pad # 7	none	Rinse only	low = RE full = RF off = "rt"
Drain pump	Pad # 4	drain pump on/off	China Crystal or Party glasses	on = dP off = "rt"
Vent/ Fan dry	Pad # 5	Active vent on/off	Top Rack, Eco Wash Glasses	on = Fan speed off = "rt"
Soil Sensor	Pad # 8	none	Wash Silencer or Wash pressure	on = senser voltage reading off = "rt"
Thermistor	{Pad # 9}	none	Wash Temperature	on = Temperature in °F off = "rt"

Control Codes

At time codes may appear in the display below are a list of codes. Not all codes are failure or error codes so be sure to read what the code means.

Display	Reason for Code	What it indicates
"uo"	Vent open	When in a wash cycle the control does not receive the proper indication that the vent is closed. The control will try to reseat the vent if after 5 attempts the vent does not close the failure will appear. The cycle will not start.
"uF"	Fan is not running	When in the dry mode, the control does not receive the proper feedback from the vent that the fan is running at the proper speed. The failure will appear and the control shuts down
"Er"	Membrane Switch failure	When the control verifies that any of the pads on the membrane switch has been closed for one minute the failure will appear in the display
"CE"	Configuration error	On power up the control verifies a problem with the options the failure will appear.
CL	Door switch open	The control is not receiving power from the door switch
dP	Drain pump operations	This will be seen in the r/t test if pad # 4 has been pressed
FL	Water valve is on	This will be seen in the r/t test if pad # 1 has been pressed
HO	Heat delay	The control has extend the length of a cycle to allow for an increase in water temperature
hs	Hall Sensor	The control has sensed a problem with the Hall style sensor in the wash motor.
LO	Low rinse aid	The control has received a signal from the rinse aid dispenser that the rinse agent level is low.
PF	Power failure	The control has experienced drop in power to the processor
rA	Rinse aid	The control has sensed a problem with the reed switch in the Rinse aid dispenser
RE	Rinse aid	The reed switch in the rinse aid dispenser is closed. This can be seen in the r/t test if pad # 7 has been pressed
RF	Rinse aid	The reed switch in the rinse aid dispenser is open. This can be seen in the r/t test if pad # 7 has been pressed
rt	Relay/triac test	The control has entered the r/t test program
Sd	Detergent disp.	The detergent dispenser has been activated
tu	Turbidity sensor	The control has sensed a failure in the turbidity sensor while in the Water Service test.
UL	UL test mode	The control has been programmed for a UL test mode.

DISASSEMBLY AND SERVICE

SAFETY PRECAUTIONS

Always turn off electrical power supply before servicing any electrical component, making ohmmeter checks, or making a part replacement. Refer to safe service procedures at the front of this service manual before servicing the dishwasher.

All voltage checks should be made with a voltmeter having a full scale of 130volts or higher.

After service is completed, be sure all safety grounding circuits are complete, all electrical connections are secure, and all access panels are in place.

CONTROL PANEL

Note:

Console will come as console assembly consisting of the following; console, keypad (installed), and foam blocks around ribbon.

1. Disconnect the dishwasher from electrical supply.
2. Remove the outer door panel;
 - a. The outer door panel is held to the inner door panel by two screws and four locking tabs, two on each side of the door panel.
 - b. Remove the lower two screws, one on each side that secures the outer door to the inner panel.
 - c. Close the door and slide the door panel down and outward to remove.
6. Remove the six remaining screws mounting the control panel to the inner door.

Electronic Control

1. Disconnect the dishwasher from electrical supply.
2. Remove outer door panel
3. Remove console from top of inner door panel
4. Remove control cover (3) mounting screws.
5. Remove wires and plugs connectors See Figure 30
6. Raise ribbon lock and remove ribbon from control See Figure 30
7. Remove control
8. On installation make sure all wires are connected in proper location and tight to terminal.

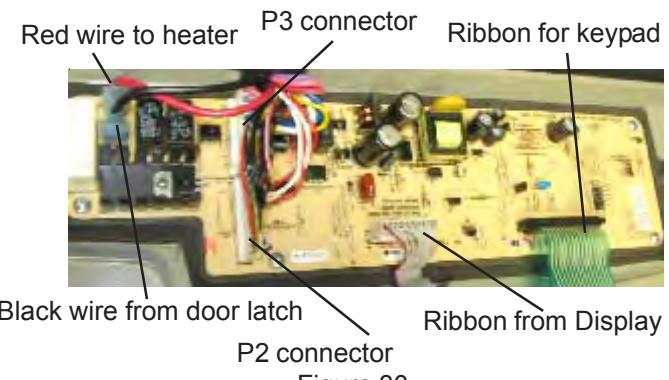


Figure 30

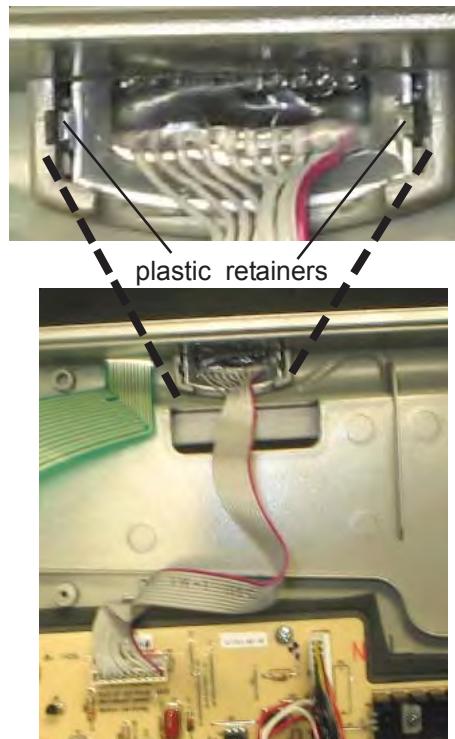


Figure 31

Door Latch

1. Disconnect the dishwasher from electrical supply
2. Remove outer door panel
3. Remove console
4. Remove wires from both door switches
5. Remove two Torx screw holding latch See Figure 33
6. Pull latch out at the top from inner door panel and up to clear location tab on rear of latch. See Figure 32
7. On installing wires on door switches make sure both white wires are on one switch and both black wires are on the opposite switch.
8. Install latch in reverse order.

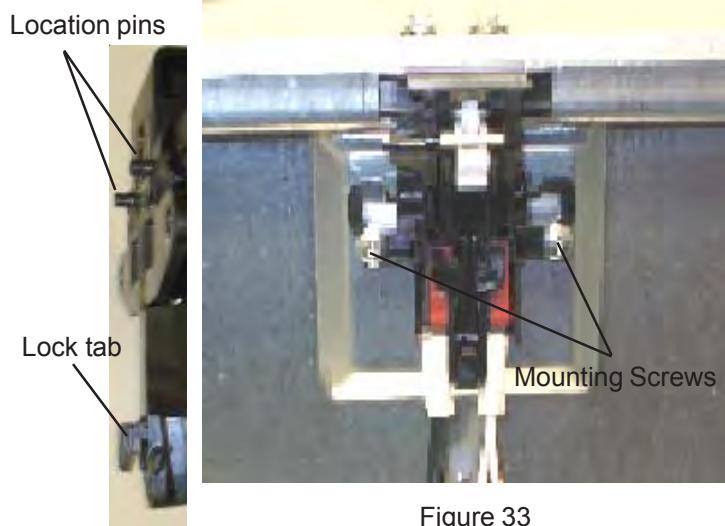


Figure 32

Door Strike

The door strike mounts to the top frame of tub with two 5/16 bolts the strike is not adjustable. The strike is the part the door latch attaches to when closed. To replace the tub will have to be pulled forward to access the two mounting bolts. See Figure 34



Figure 34

Detergent/ Rinse aid Dispenser

To diagnose operation of the dispenser use the Water Service Test
See the section on testing the control system.

1. Disconnect the dishwasher from electrical supply
2. Remove outer door panel
3. Disconnect wiring from dispenser
4. Remove six Phillips screws and carefully push dispenser into the tub

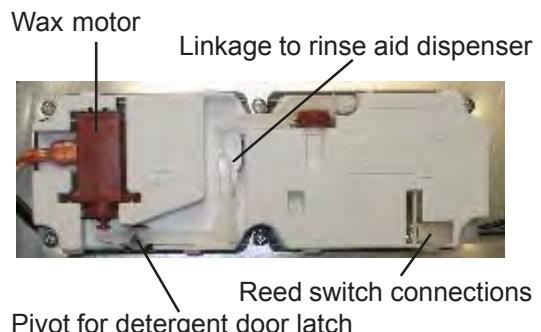


Figure 35

Door hinge

1. Disconnect the dishwasher from electrical supply
2. Remove outer door panel
3. Dishwasher needs to be pulled forward to replace door hinge
4. Check water line and drain hose before removing counter top screws and pull forward.
5. Remove cable and spring from hinge.
6. Remove bolts mounting hinge to inner door panel. Take care not to damage foam baffle at bottom of inner door panel.
7. Remove hinge pin hold hinge support with pliers while removing pin.
8. Install hinge make sure the shoulder on hinge pin is properly in hole in hinge before tighten pin.
9. Complete repair in reverse order.

Door Seal

1. Door seal just pulls out of channel around tub.
2. To replace find center of gasket make sure back goes into channel first. Back is marked with a color stripe.
3. Starting at center top press gasket into channel just to hold in place See Figure 36
4. Go to bottom on either side find block molded into bottom of tub fill block with gasket.



Figure 36

5. Form gasket into an "L" press gasket up channel in several spots. See Figures 37&38



Figure 37



Figure 38

6. Repeat steps 4 and 5 for opposite side
7. Close door to seat seal.

Bottom Door Seal



Figure 39

Bottom

1. Remove lower rack from tub
2. Open door completely down door seal can be pulled out from the right side. See Figure 39 & 40
3. Pull straight into tub.
4. When installing new seal place seal in channel just enough to hold in place
5. Close door for tub to push seal in place.



Figure 40

Upper Rack

1. To remove rack, unsnap and remove retainers at end of metal track. Once retainers are removed, pull rack straight out.

Tub Roller Assembly

There are two tub roller assembly, front and rear, on both sides of the tub. Each assembly has a top and a bottom rollers installed on a mounting plate with molded in axles, these assemblies are screwed into the tub using two screws. See Figure 41



Figure 41

CENTER SPRAY ARM

1. Pull upper rack forward to gain access to spray arm.
2. Center spray arm and delivery tube are an assembly, push this assembly to the rear to loosen and remove from rack. See Figure 42

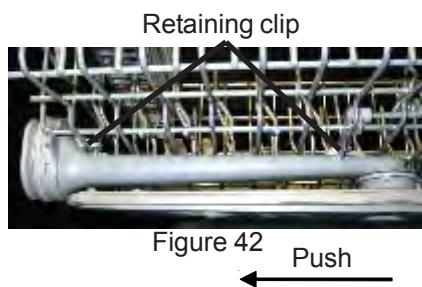


Figure 42

Push

Upper Spray Arm

To remove the upper spray arm turn the mounting nut counter clockwise to unscrew from delivery tube. If mounting nut is too tight place the handle end of pliers into the notches and turn to remove.

Lower Spray Arm, Spray Arm Support & Filter See Figure 43

1. Remove lower rack
2. Lower spray arm clips onto the lower spray arm support lift spray arm off support

Spray arm support & Filter

1. Turn support clockwise 90° lift support from sump.
2. Filter is now free to lift out



Figure 43 Heater

HEATING ELEMENT

1. Disconnect the dishwasher from electrical supply
2. To remove element disconnect wiring and remove two element mounting nuts. See Figure 45
3. Lift terminal ends from tub.
4. Raise locking hook on mounting brackets to slide element from brackets. See Figure 44



Figure 44



Figure 45

FLOAT SWITCH AND MOUNT BRACKET

Remove float by lifting up out of tube molded in bottom of tub.

1. Disconnect the dishwasher from electrical supply
2. For ease of service, remove outer door panel and the kick plate, removewires to float switch.
3. Unscrew Phillips screw holding assembly to tub, there is a hole provided in the actuator lever to access screw. Screw will remain in assembly once removed.
4. When installing Switch and bracket onto tub make sure mount stays tight to tub. See Figure 46



Figure 46

WATER VALVE

Testing water valve and float switch is best preformed by using the Water Service Test see section on testing the control system to start this test.

1. Disconnect the dishwasher from electrical supply
2. Turn water off to dishwasher before replacing valve
3. Gain access to valve remove wiring, water line, and fitting from valve.
4. Water valve is secured with two screws. See Figure 47

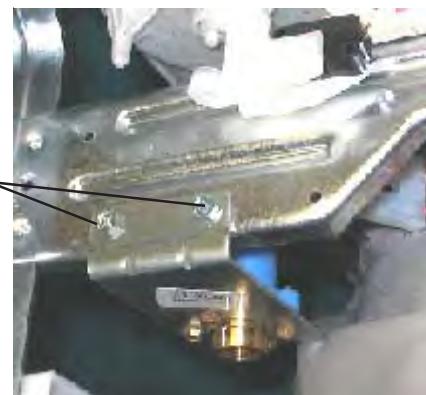


Figure 47

DRAIN PUMP

Testing the drain pump can be done by using the Water Service Test following the test the drain pump will be activated when the number 7 appears on the display then check for power the drain pump. To start the Water Service Test see the Section on checking the Control System.

Replacing the Drain Pump

1. Disconnect the dishwasher from electrical supply
2. Gain access to drain pump remove wiring and drain hose from pump. Slide clamp on sump end of the hose between pump and sump to the center of hose



Figure 48

Slide this clamp toward the drain pump

3. Insert small screwdriver into top hole of pump mount on front of sump, push down on screwdriver to release top mounting hook pull top of pump back and hold. To help hold this out use something small as a wedge between the pump mount and the sump this will keep this out while you move to the bottom lock. See Figure 48

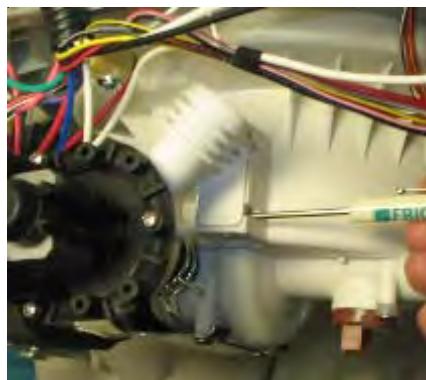


Figure 49

4. Insert screwdriver this time in lower hole of the pump mount, push down and pull back on pump will release pump from sump. See Figure 49
5. Pump can now be removed.

PUMP AND MOTOR ASSEMBLY

1. Disconnect the dishwasher from electrical supply
2. Remove spray arm, spray arm support, and filters from inside of tub
3. Remove outer door panel and kick plate to gain access to the under side of the dishwasher.
4. Disconnect wires from both wash motor and drain pump, then loosen the clamp on the delivery tube, the clamp can be reached on the right side, between the sump and the side frame of the unit. The delivery tube clamp has a 5/16 inch head. Carefully push delivery tube away from the rear port of the sump. See Figure 50

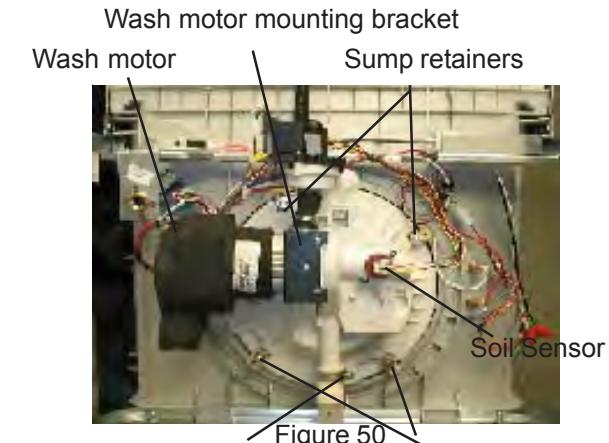


Figure 50
clamp on the delivery tube Sump retainers

5. Pump and motor assembly is secured in place using four retainers that will turn into sump to release from tub. Push sump into tub, then by rotating to the right will aid in clearing wash pump and drain pump as sump is lifted out.

Remove motor from sump.

1. Remove sump from tub
2. Remove volute cover and check ball
3. Turn sump over and remove motor mounting bracket (2 screws)
4. Lift bracket from sump.
5. Return sump to up right position.
6. Place end of a flat blade screwdriver in front of wash impeller and force motor out rear of sump. See Figure 51



Figure 51

The following repairs will require removing the dishwasher from under the counter. Before starting the repair, disconnect the power to the product, also make sure others are aware that you have turned this off for your safety. Turn off the water supply to the dishwasher and mark the valve as being turned off this is again for safety. After the utilities have been turned off, lower the dishwasher as much as possible to prevent damage to the counter. Always use floor protection as the unit is pulled forward.

DELIVERY TUBE

- With dishwasher removed from under counter top unscrew and remove the upper spray arm. This unscrews counter clockwise.

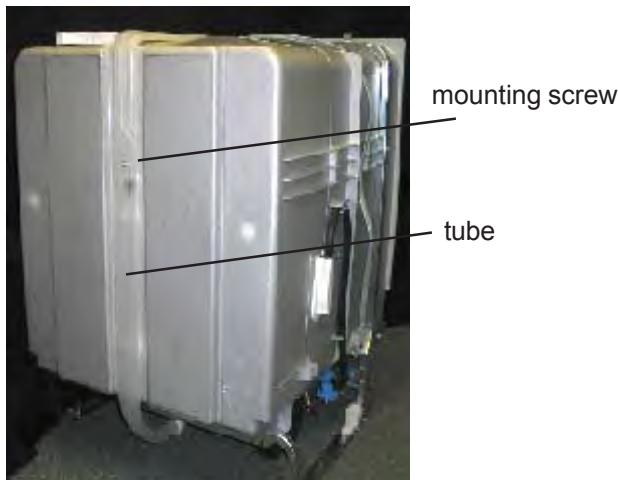


Figure 52

- Remove mounting screw in back of tub. See Figure 52
- Remove clamp from sump end of tub and remove tube.

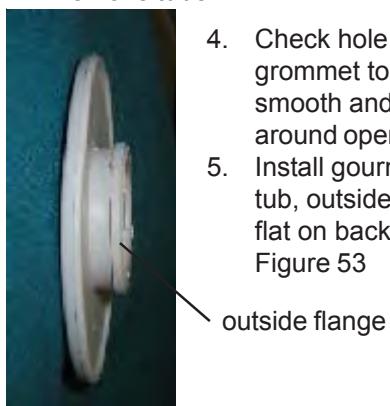


Figure 53

- Check hole in back of tub for grommet to be sure it is smooth and no extra plastic around opening
- Install grommet from inside tub, outside flange must be flat on back of tub. See Figure 53

outside flange

- Reinstall tube on to sump then install center screw.
- Tighten both upper spray arm mounting nut and clamp on sump.

Vent and Fan Assembly

- With the dishwasher removed from under the counter either remove the upper rack or just pull forward to access the vent assembly

Vent and fan assembly mounting nut.



Figure 54

- The locking collar holding the assembly in place turns off to the left (counterclockwise). See Figure 54

This is a very tight fit pressing down on the outside of the assembly can help in removing part See Figure 55



Figure 55

- Installing new assembly be sure gasket is in place and collar locks on completely to prevent leaks. See Figure 56



Figure 56

- To install tube start by placing tube in top of tub and installing upper spray arm loosely.
- Place center opening of delivery tub into the tub. Be sure to hold grommet in place while pressing tube into opening.

Dishwasher Question & Answer

Keypad issues

Q. The keypads purpose is to program specific cycles and options into the control. When a selection is made the control is instructed to start the cycle by pressing the start pad however the dishwasher does not respond followed by all of the lights as well as the indicator go out. How do you determine if this is a control or a key pad problem?

A. The fastest way for determining if the failure is between the control or keypad follow the tests below but first remove power from the product with the door closed then reapply power. This will give you a **PF** indication. Now start with Test #1

Test #1 (Keypad cleared the **PF**)

- 1) Press the **Start** pad to see if this clears the **PF**, if it does clear, restart the cycle. If the cycle still does not start the problem is with the control replace the control.

Test #2 (Keypad did not clear the **PF**)

- 1) Pressing the start pad does not clear the **PF**
 - 2) Next open the door of the unit. If the **PF** clears the keypad needs replaced.
 - 3) If with the door open the **PF** still does not clean replace the control
-

Electronic control

Q. The electronic control is dead, no lights, power to the control is checked from where? A **PF** code is read in the display this really means there has been a "Power Failure" to what?

A. Power to operate all electronic controls comes directly from the Junction box and not the door switch. A **PF** indication is saying there has been a power failure to the microprocessor on the control board. This power failure can and in most cases is in the product itself. All components in the control system need to be checked and evaluated. This includes the keypad, all sensors, and wire connections to the control and all control system components.

Not cleaning

Q. With a customer's report that the dishwasher is not cleaning list the four (4) basic items that need to be checked when you first arrive at the product.

A. For any complaint dealing with not cleaning always check the **temperature** and the **amount of water**. This is followed by the **hardness** of the water and the **amount of detergent** the consumer is using. This information can also be found in the Owners Manual. See www.cleaning101.com for more information.

Door leak

Q. A leak has been reported coming from the top of the dishwasher originating from between the inner door panel and the tub what two (2) procedures can best be used to correct this problem?

A. Water leaks coming from the top of the door first check the level and square ness of the tub. Leaks in this area can best be solved by checking and either reinstalling or replacing the tub door seal. Adjusting the latch tighter by replacing the latch or adding spacers between the latch body and the inner door panel part number 2ea. 5300809968.

Upper rack rail has come off tub because of a loose roller

Q. The screw mounting the upper rack roller to the tub has become loose how can this problem be corrected?

A. The screws mounting the rack rail rollers are screwed into the plastic tub. If these become stripped or will not tighten, there are two replacement kits available.

Kit #1 Part number 154408501

This kit consists of 4 rollers, 4 screws and 4 washers, to be used as replacement for all rollers on all plastic tub dishwasher manufactured from 1996 to present. These rollers can be used, as needed, one roller, screw and washer at a time for replacement.

Kit # 2 Part number 154408502

This kit is similar to the first with 4 rollers, 4 screws but 8 washers. This kit is for the rear rollers on all direct feed models and is intended to be used as a complete kit only. The screws in both kits are designed to cut new threads into the stripped out mounting hole in the tub.

Display codes

Q. What do the following codes mean when they appear in the display ***PF, CL, HO, LO?***

A.

1. ***PF*** means there was been a power failure to the microprocessor on the control
 2. ***CL*** means the door switch I open
 3. ***HO*** is informing the customer the cycle time has been extended to increase the water temperature
 4. ***LO*** is telling the customer the level of liquid rinse aid is low in the dispenser.
-

Tub

Q. The heater has fallen from one of the mounting bracket and burnt a hole in the plastic tub, how can this product be repaired?

A. Holes found in plastic tubs are not to be repaired. The tub is a replaceable part so it can be replaced. All replacement tubs come with the frame already mounted to the tub.

Wash motor

Q. The motor used with the Precision Wash system turns in which direction facing the impeller end of the motor?

A. Wash motor on all Precision and Precision Direct model dishwashers will turn counter clockwise facing the impeller.

Not drying

Q. List the four (4) most important items that must be checked for this problem.

A. The four most important items that need checked for drying a dish load are **water temperature, the amount and presence of rinse aid, loading of the product and heat from the element.**

Rack

Q. What can be done for the rack in a dishwasher that shows signs of rust?

A. Repair kits are available to touch up rust on dishwasher rack. These kits contain replacement tips for the tines and a bottle with brush on touch up. All loose rust should be removed before applying touch up to the effected area. The part number for repair kits are as follows: White racks 5303310273, Light blue 5303310272.

18" Dishwasher Change

Q. Why can't you order the Motor Shaft Centering Tool anymore for the 18" motor seal?

A. The tool is NLA. Electrolux came out with a complete motor and pump kit for the 18" models the part number is 154582601.

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Announcement

Production Icemakers: Now Installed in Fill Position

MODELS Frigidaire refrigerators with rear and side mount icemakers.

PROBLEM Change in part number to both rear and side mount icemakers.

CAUSE Icemakers coming into the factory are now set in the fill position instead of the off position.

SOLUTION In order to improve testing of our icemaker wiring and water valve, icemakers for production will be shipped to our factories in the fill position. This will create a new part number.

The icemakers for field service will keep the old part number and will continue to be shipped in the off position. Rear-mounted icemakers for service replacement have p/n 241680601. Side-mounted icemakers have p/n 5303918277.

Electrolux has elected not to change service icemakers to ship in the fill position, primarily because consumers and service technicians do not typically unplug the appliance prior to replacing the icemaker. Failure to unplug the appliance when an icemaker in the fill position is being installed would cause water to enter the freezer as soon as the icemaker is plugged into the cabinet harness. The part number on the icemaker by the end of the first quarter of 2006 will not match the part number in the illustrated part listing. This notice is to inform the field there is a difference in part numbers.

Bottom Grill Detaching on Top Freezer Refrigerator Models

MODELS All Frigidaire top freezer refrigerator models with serial numbers beginning with TSA.

PROBLEM The bottom grill will not stay attached.

CAUSE Vent holes in the bottom front of the cabinet allow air to escape during the foaming process. If extra foam is inserted into the cabinet, it can work its way out of the vent holes. The vent holes line up with the bottom grill clip and do not allow it to snap in behind the front bottom section of the cabinet.

SOLUTION To correct the problem, technicians should cut out the bulging foam with a utility knife (Figure 1).

NOTE: It is very important that the bottom of the front flange is straight. If the bottom of the front flange is bent up from shipping, it must be straightened when checking for foam leakage.

Install the bottom grill. If the top of the grill pops off, the bottom of the cabinet also is pushed down from the foam. In this case it will be necessary to push a screwdriver or a pry bar between the front panel and the bottom of the cabinet (Figure 2). Once the screwdriver is in place twist it, this will push up the bottom of the cabinet and allow additional area for the bottom grill retainer to catch on the front panel (Figure 3).

Cut foam so it's even with the bottom of the cabinet.

Check the bottom rail of the front panel. It must be straight for the bottom clip on the grill to fit correctly.

Place a pry bar or a screwdriver between the front flange and the bottom of the cabinet and push down on the pry bar, or twist the screwdriver.

With foam removed and bottom of cabinet pushed up if necessary, this will allow additional surface in front for grill retainer to catch against.



Figure 1



Figure 2



Figure 3

Small Ice Cubes or Ice Chips Jamming the Icemaker

MODELS Frigidaire refrigerators that filtrate water that is fed to the icemaker.

PROBLEM Small ice cubes or ice chips jamming the icemaker and stopping ice production.

CAUSE The water filter has reached its maximum life and is slowing the flow of water to the icemaker. It has reached its useful capacity of removing particles from the water and is becoming clogged. Due to the flow washer in the secondary water valve on the icemaker's side, the icemaker cannot get the amount of water needed to fill every cube position in the icemaker mold. With the mold not completely filled with water, the results is the production of the small cubes and or chips that are getting caught between the ejector and the stripper.

SOLUTION Technicians should verify that the water filter has been replaced inside of 6 months prior to the service call. The problem with the icemaker could be caused by restricted water flow due to a clogged and overused water filter.

NOTE: If the consumer has hard water, the filter may need to be replaced more frequently.

In some cases, the servicer is improperly resetting the fill time on the icemaker. This is just a temporary fix. As the filter gathers additional particles from the water, the flow to the icemaker will be reduced again.

Once the filter is finally replaced, the icemaker will get too much water and the cubes are so large it is taking a long time for the heater to heat the mold hot enough the brake the ice free. This causes the cubes to become very wet and stick together in the bucket or on top of the stripper.

All service technicians should have a measuring cup to check the water fill rate. The cup is provided with all bail arm kits for the last year. The correct amount of water entering the ice maker on a rear mount ice maker is 80 to 100 ML and a side mount ice maker it 110 to 130 ML.

The ice jam shown was taken from a lab unit with a restricted filter. The ice maker jammed every 1 or 2 days. The filter was replaced and it has now been 3 months since the icemaker jammed.



Removing EPS Residue from Black and Stainless Refrigerator Doors

MODELS All Frigidaire black and stainless steel refrigerators.

PROBLEM EPS (expanded polystyrene) residue that is being left on some black and stainless doors during production is unattractive to the consumer.

CAUSE The EPS foam blocks, which wrap around the front of the product as part of the shipping carton, are leaving residue on the refrigerator cabinet—in most cases in the form of a white film on the front edge of the door.

SOLUTION Technicians should be careful not to confuse this issue with the article regarding a film on the cabinet being left from wet foam production. That problem related only to stainless steel models with EasyCare™ doors. This issue can apply to all stainless and black products. The same film also appears on white products, but cannot be seen. There are several different cleaners that will remove the EPS residue without damaging the finish on the product. One that Electrolux has found to be reliable and is very easy to find is GOO-GONE, and can be purchased through most of your discount stores.

Rear Icemaker Fails to Shut Off

MODELS Frigidaire refrigerators with rear-mounted icemakers.

PROBLEM Rear mount ice maker will not shut off when bucket is full.

CAUSE The bail arm extension is folding back under the icemaker when the arm comes down on a ice cube leaning to the back of the bucket.

SOLUTION The addition of a spring (Figure 1) on the ice maker bail arm will prevent the extension from folding back under the arm when it drops down after the harvest cycle. This spring clips behind the bail arm extension and runs in front of the center step down on the main arm and pulls the extension forward. The part number for the new bail arm kit is 5304452073.

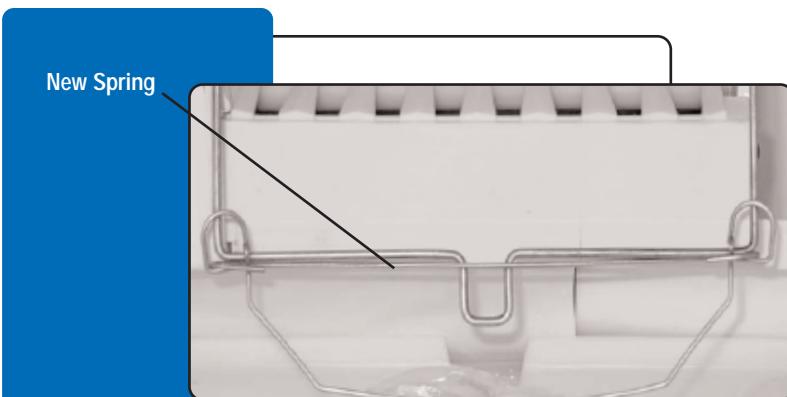


Figure 1

Icemaker Bail Arm Catching on the Shelf in Side-by-Side Refrigerators

MODELS Side-by-side refrigerators with rear-mount icemakers

PROBLEM Bail arm catching on the shelf in front of the icemaker.

CAUSE The step-back area of the shelf that allows the consumer to reach the on-off switch is catching the bail arm.

SOLUTION If the shelf in front of the icemaker is allowed to shift toward the right because of a wide liner or the shelf is installed incorrectly, the bail arm can catch on the shelf. If it catches on the way up the ice bucket will overflow. If it catches on the way down, the icemaker will stop producing ice. The part numbers on the shelf will change as follows:

SxS Unit	From	To
26'	241559001	241691901
23'	241558901	241691801
Counter-Depth	241504501	241691701

Technicians can use the new part in place of the old, but the old shelf cannot be used in place of the new. The back of the shelf was moved forward and the step-back to reach the On/Off switch was removed. The new shelf requires removal to turn off the icemaker. This change was made because moving the shelf when removing food could allow the shelf to hit the switch and shut off the icemaker. Moving the back of the shelf forward allows additional space for the bail arm so it does not get caught. These changes aim to reduce the service call rate on these issues.

When replacing the shelf on a 26-foot side-by-side, it is advisable to replace the shelf support rail that is fastened to the top of the freezer with rail p/n 241692001.



original shelf



new shelf

Clicking Sound when Opening or Closing the Doors on a Side-by-Side Refrigerator

MODELS Side-by-side refrigerators that have a serial number beginning with 4A

PROBLEM Clicking sound when opening and/or closing the doors.

CAUSE The opening in the doorstop is too large and this is allowing the cam to move back and forth.

SOLUTION On side-by-side refrigerators that have a serial number beginning with 4A, the opening in the doorstop is too large. This will allow the upper cam to move back and forth when the door is opened and closed. (See Figure 1)

The moving of the cam in the doorstop is causing the clicking sound. (See Figure 2) To correct the problem, replace the upper cam and doorstop. Order the parts by model number as they come in different colors and sizes depending on model.



Figure 1



Figure 2

Change to Manual Defrost Setting on Standard-Depth Refrigerators

MODELS Some standard-depth refrigerators

PROBLEM Changes in the manual defrost setting on electronic controls used on standard-depth products.

CAUSE The change was made to bring the single-board electronic control used in the standard-depth refrigerator in line with the two-board electronic control system used in the counter-depth refrigerators.

SOLUTION Technicians must press and hold the freezer compartment temperature up arrow while pushing the food compartment temperature down arrow 5 times in a 6 second period of time. This will advance the control into a manual defrost cycle (see Figure 1).

Do not press the button too fast or the control may not pick up the request. The only products still using the old manual defrost method (using the food compartment light switch to advance the control system into defrost) are the electro-mechanical control models (models with a food and freezer compartment cap tube-style cold control).

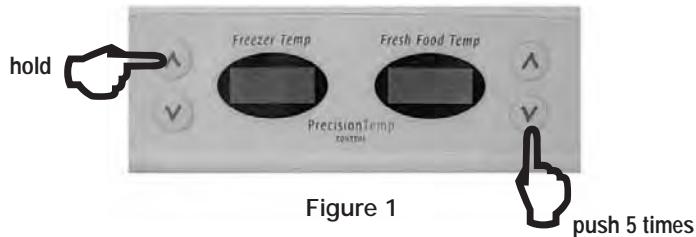


Figure 1

Refrigerators Shipped with Handles Uninstalled

MODELS Side-by-side and top freezer models with uninstalled stainless steel handles packed in the carton.

PROBLEM Customers and technicians are opening product to discover the handles are not installed.

CAUSE Shipping without the handles allows for less damage to the product and allows for more products to fit in the trailer for transport.

SOLUTION A number of questions have arisen about refrigerators delivered with uninstalled stainless steel handles. There are a number of models that are now being shipped with the handles packed inside the product; or in the case of side-by-sides with long handles, the handles are packed in a carton and taped to the doors.

Additionally, there have been questions about the use of an Allen wrench and Allen screws to hold the handle on the studs in the door. The Allen wrench and screws are packed in a plastic bag in the handle carton. If the plastic bag is missing, the part numbers for the Allen screws and Allen wrench (which is a .093 or 3/32 wrench) are, respectively, p/n 218755402 and p/n 241601001.

No Water Coming Out of the Dispenser on Side-by-Side Refrigerators

MODELS

Side-by-side refrigerators that have a serial number beginning with 4A524 to 4A6009999

PROBLEM

No water coming out of the dispenser.

CAUSE

The water line is freezing in the door behind the dispenser. The conduit in the freezer door that allows the water line to slide through has moved during the foaming process and is too close to the inner door panel. This will allow the water line to freeze in the door. The problem was caught and corrected with the serial number beginning with 4A6010000.

SOLUTION

To correct the problem in the field the freezer door will need to be replaced. Varying doors are used for different products, Illustrated Parts Lookup should be used to verify that the correct door is ordered.

Broken Damper Retainer on Counter Depth Side-by-Sides

MODELS All counter depth side-by-sides.

PROBLEM The retainer (upper or lower) on the damper housing (that holds the cover over the damper in place) on any counter depth side-by-side is broken.

CAUSE The retainers are part of the damper housing which is foamed in place and cannot be replaced.

SOLUTION There are two field service retainers that can be installed with screw part number 215296300 to hold the service retainer in place of the broken housing retainer (See Figure 1). The part numbers are 241711900 for the top retainer and 241712000 for the bottom retainer (See Figure 2). The screw hole is already in the housing. Simply remove any part of the broken retainer if it is broken at an angle. Place the service part over the screw hole in the housing lining up the two screw holes and install the screw. You can now snap the damper cover back in place.

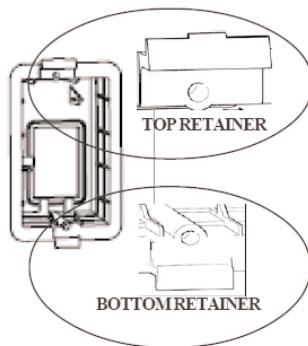


Figure 1



top retainer (p/n 241711900)



bottom retainer (p/n 241712000)

Figure 2

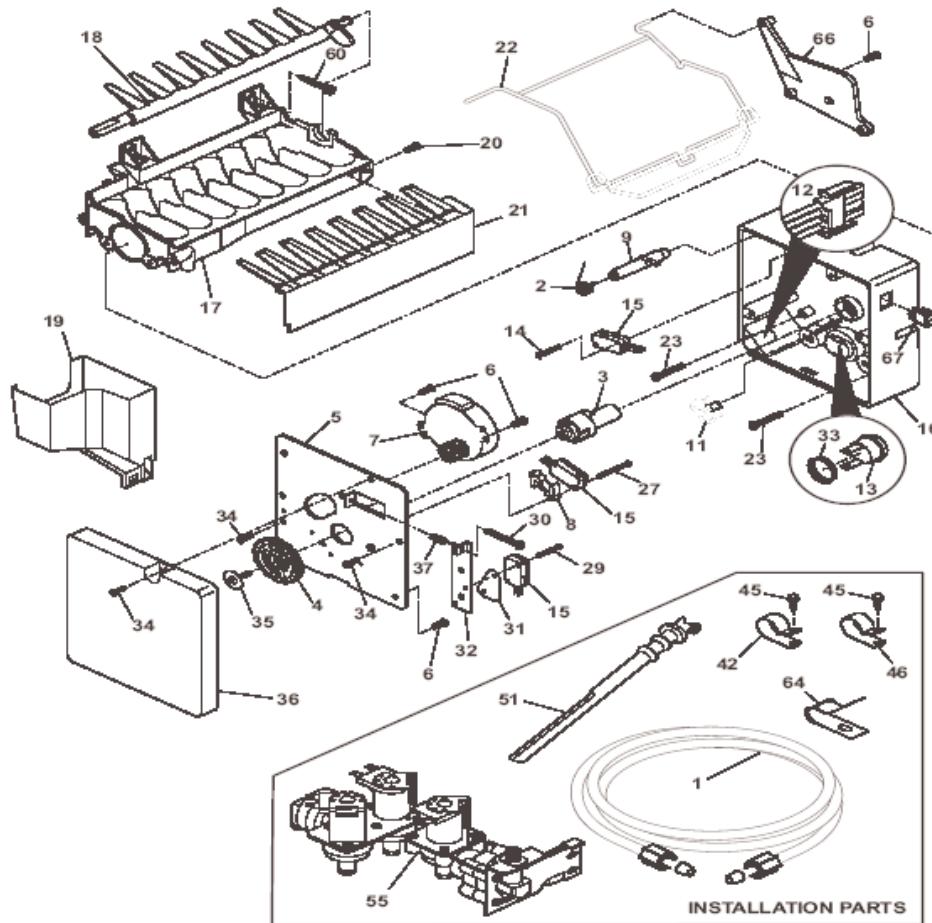
Locating Part Numbers for Rear-Mount Icemakers

MODELS Refrigerators that utilize a rear-mount icemaker.

PROBLEM Technicians are unable to find the correct part number for parts used inside the transverse (rear-mount) icemaker.

CAUSE Error in the parts information on models using the transverse icemaker.

SOLUTION Use the part illustration and part number list below for the correct part numbers on all transverse icemakers.



Refer to numbered part list on page 6

Locating Part Numbers for Rear-Mount Icemakers continued

Pos #	Part #	Description
1	218976409	Tube-water-DOOR
1*	218976901	Tube-water inlet, inlet valve, to ice maker
1*	240561701	Seal-water inlet, inlet valve, to ice maker
1*	218976903	Tube-water inlet, inlet valve, to filter
1*	218976907	Tube-water inlet, valve to door
2	5304436616	6 Spring, torsion
3	3206313	Cam
4	3206301	Gear
5	5304436604	Plate-mounting
6	3206305	Screw-ground wire, 8-32 x 0.250, (4)
7	5304436619	Motor-ice maker
8	3206312	Spacer-hold switch
9	5304436610	Detent
11	5304436618	Thermal Cutoff, ICE MAKER
12	5304436614	Harness-wiring
13	5304436613	Thermostat, ICE MAKER
14	5304454896	Screw, 4-14 x 5/8, plask, switch mtg., (2)
15	3206324	Switch, (3)
16	5304436609	Housing, control
17	5304436617	Mold-ice maker, with heater
18	5304436607	Ejector-ice
19	5304436606	Cup-water inlet
20	5304408581	Screw, 8-32 x 0.375
21	5304436608	Ice Stripper
22	5304436602	Shut-off Arm
23	5304454897	Screw, 8-32 x 0.875, taptite
27	3206338	Screw, 4-40 x 1.000, hold switch mtg.
29	3206323	Screw, 4-24 x 0.750, (2)
30	3206341	Screw-timing adj, 8-32 x 1.000
31	3206342	Insulator
32	3206343	Plate-valve switch
33	5304436615	Spring-thermostat
34	5304420655	Screw, plazscrew, 8-10, (3)
35	5304408585	Screw
36	5304436605	Cover-ice maker
37	5304408583	Spring-timing adj
42	5303001199	Clamp-wiring harness, strain relief
42*	218515402	Clip, (2), tube mtg.
45	5303001343	Screw, washer head, 8-15A x 0.5
46	5303001193	Clamp, .50 ID, steel, water tube
46*	5308000133	Clamp, nylon, .625 ID
51	241523503	Tube-water fill, extension
55	240531101	Valve-water, triple solenoid
55*	218709100	Screw, hex head, 10-32 x 0.500
55*	240363601	Screw-shoulder
55*	240542901	Cap-water valve
60	5303207328	Screw, hex washer head, 8-15A x 1
64	5303001549	Clamp, 0.31 ID, steel, copper wir line
66	5304436611	Bracket-ice maker
67	5304436612	Switch, on/off
*	240352601	Wiring Harness, internal, with plug
*	218888001	Adapter-water supply, nut & sleeve
*	241587402	Deflector-ice
*	241583301	Deflector-air, ICE MAKER
*	241696501	Ice Maker, Radius Cube, 115V

Water Collecting in the Bottom of the Freezer Cabinet on Side-by-Sides

MODELS All side-by-side refrigerators

PROBLEM Water in the bottom of the freezer under the lower basket.

CAUSE Defrost water is not going out the drain.

SOLUTION There are three things you should check when you find this problem, in addition to a simple check of the drain tube position in the drain pan.

1. The rubber drain tube is not seated all the way into the liner (Figure 1). The drain tube has a channel around the top that the liner should rest in. When the liner is not seated in the channel, it will hold water in the area around the drain and freeze. Additional water will freeze to ice each time it defrosts until the drain is frozen shut.

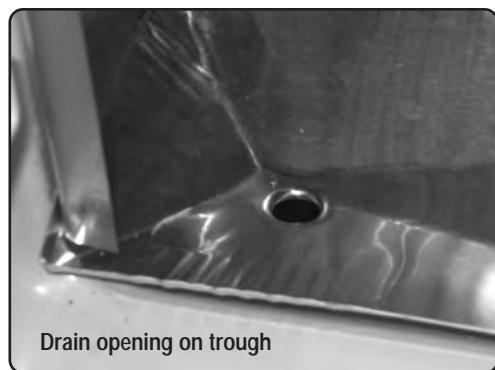
After the ice is removed from the freezer and the drain, add additional water to the drain area and make sure all the water drains out—paying strict attention to the area of the plastic liner under the aluminum drain trough. If there is an area by the drain that is holding water and not draining, use silicone sealer to fill the low area until all water drains out with a product that is sitting level.

NOTE: It may be necessary to tip the evaporator and drain trough up from the bottom to gain access to the drain area in the liner.

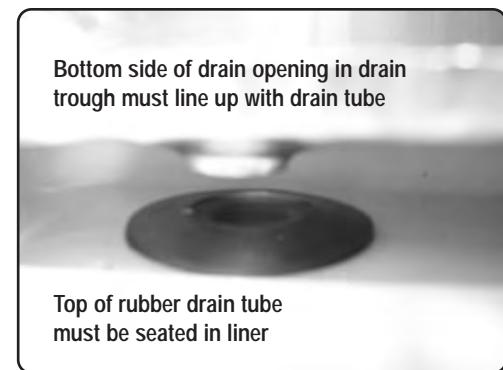
2. While the product is apart, ensure the aluminum drain trough hole is directly over the rubber drain tube forming the drain in the liner. If not, bend the trough enough to make them line up. (Figure 1)
3. The evaporator cover should be inside the drain trough at the bottom side, so defrost water running down the back side of the cover will drain into the drain trough and not into the freezer bottom. When the cover is reinstalled, place the bottom edge into the drain trough first, push the cover against the evaporator, and reinstall the screws. (Figure 2)

continued on next page

Water Collecting in the Bottom of the Freezer Cabinet on Side-by-Sides continued

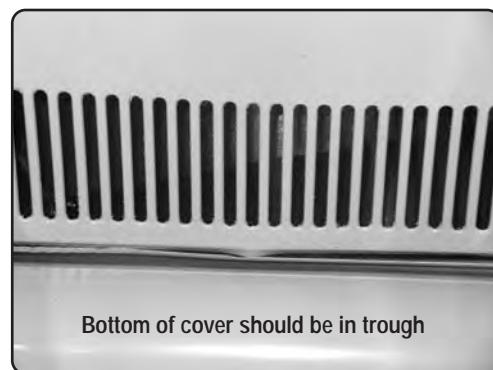


Drain opening on trough



Top of rubber drain tube
must be seated in liner

Figure 1



Bottom of cover should be in trough

Figure 2

Water Leaks on the All Refrigerator

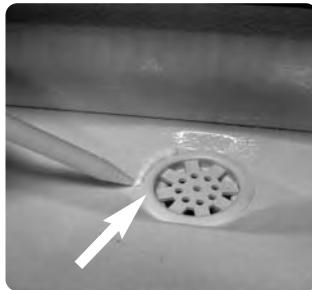
MODELS PLRU1777DS and PLRU1778ES

PROBLEM Water on the floor, under the unit, or at the front of unit.

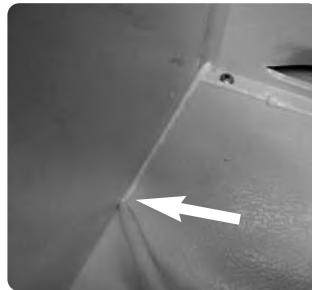
CAUSE The metal liner bottom may have a hairline crack in the drain hole, caused by punching the hole for the drain. With the oversized drain, it accentuated the problem. The galvanized liner bottom may also allow the water to seep through the seam around the bottom of the refrigerator.

SOLUTION On refrigerators, a food grade sealant may be used to seal around the drain, the seam around the bottom of the refrigerator, and where the Heat Exchanger goes through the cabinet. If the refrigerator drain freezes up, the service technician should take a 10-12 gauge copper wire and wrap it around the heater element, forming a pigtail in the drain hole.

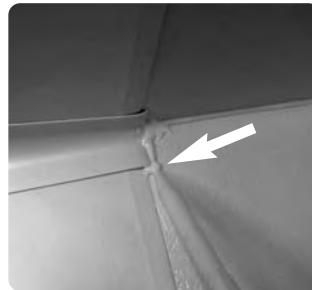
NOTE: The drain screen must be removed to use the heater extension.



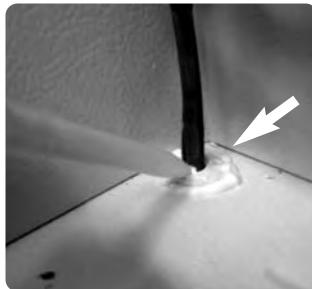
Seal around drain with Food Grade Silicone.



Seal around seam at the bottom of the refrigerator.



Seal seam across the front of the refrigerator floor.



Seal around the port where the heat exchanger comes through the floor liner.



Seal across the bottom front of the evaporator cover.

Mounting the IM501 Icemaker Water Valve

MODELS PLFU1777DS and PLFU1778ES

PROBLEM The water valve will not mount on left side, viewed from the rear as stated in the installation instructions for forced air freezers.

CAUSE The installation of the water valve and water line connection may be different from the supplied installation instructions.

SOLUTION If you are installing an IM501 icemaker kit and your model has a metal access cover (with forced air condenser), you must remove the metal access cover.

First, install the water valve on the right as shown in Figure 1. With the water valve installed, the plastic water line is connected at the bottom and the copper supply line is connected at the top as shown in Figures 2 and 3. After checking for leaks and testing the icemaker fill level, replace the rear metal access cover.

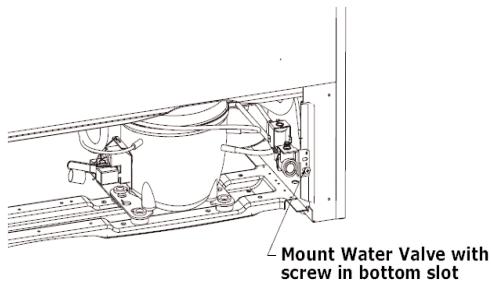


Figure 1

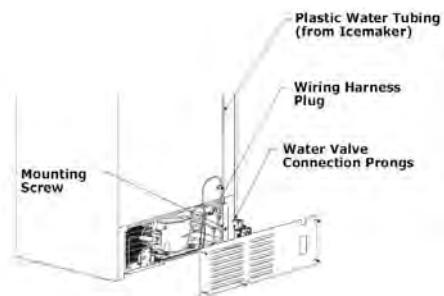


Figure 2

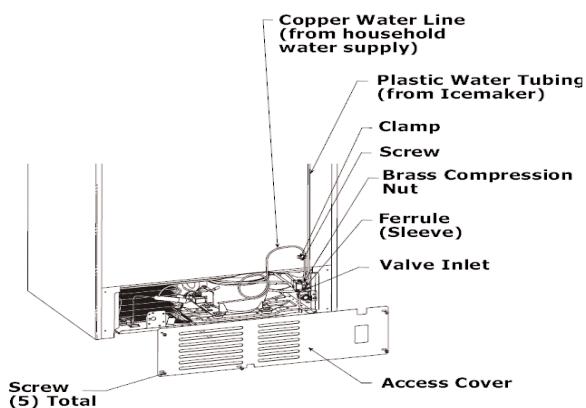


Figure 3

Announcement

New Adaptive Defrost Control on Side-by-Side Refrigerators

MODELS

All side-by-side refrigerators.

PROBLEM

A production change has been made for the Adaptive Defrost Control (ADC) used on side-by-side refrigerators.

CAUSE

A change was made in the vendor supplying the ADC control.

SOLUTION

In July, a vendor change was made for the supplier of production ADCs. The two parts are not interchangeable primarily because the side-by-side refrigerators built with the new ADC have a different damper—with a different wiring harness in the control box.

The new ADC only requires one switch for the fail-safe system of the damper motor. The freezer and food compartment cold controls are still the same. A change was made in the control box wiring harness to accommodate the switch change on the damper and the change to the electrical connection on the ADC.

This change also will result in a new part number for the damper. Again, the new ADC has only one micro switch instead of two (See Figure 1). The new ADC III and the ADC II will be the same size and mount the same way. The difference is the ADC III will have a black case and the ADC II will continue to be in the white case that has been used for the ADC since 2002 (See Figure 2).

NOTE: There was a trial run of the ADCIII in 1,000 products manufactured in the Juarez, Mexico facility. The model numbers and the serial numbers are listed below (See Figure 3). The ADC IIIs used in the trial were in white boxes and had the same electric connector as the ADC II. The only way to tell them apart is with the model and serial number or by looking at the damper (See Figure 1). Service technicians can look at the damper to see if it has one or two switches (See Figure 1). The part number for the ADC III will be **p/n 241699701**.



Figure 1



Figure 2

Models	Qty Produced	Serial Range
FRS6LR5EW3	1	4A6231 8290 to
*****	228	4A6231 8493 to 8719
FRS6R4EW7	99	4A6240 5875 to 5973
*****	150	4A6240 5974 to
FRS6LR5ES3	49	4A6231 6096 to 6144
FRS6LE4FQ1	40	4A6240 0412 to 0451
FRS6LE4FB1	49	4A6240 0712 to 0811
FRS6LR5EW3		4A6240 5263 to

Contact Failing on Refrigerator Relay Board

MODELS				
GLHS68EEW0	Dual	GLHS67EEPQ0	Dual	
GLHS68EEQ0	Dual	GLHS67EEPB0	Dual	
GLHS68EEB0	Dual	GLHS66EEW0	Single	
GLHS68EEPW0	Dual	GLHS66EEQ0	Single	
GLHS68EEPB0	Dual	GLHS66EEB0	Single	
GLHS68EESB1	Dual	GLHS66EESB0	Single	
PLHS67EESB1	Dual	FRS6L7EES3	Dual	
GLHS38EEW0	Dual	GLHS36EEW0	Single	
GLHS38EEQ0	Dual	GLHS36EEQ0	Single	
GLHS38EEPW0	Dual	GLHS36EEB0	Single	
GLHS38EEPB0	Dual	GLHS36EESB0	Single	
GLHS38EESB0	Dual	FRS6B5EEW1	Single	
PLHS37EESB0	Dual	FRS6B5EEQ1	Single	
FRS6B6EEW1	Dual	FRS6B6EEB1	Dual	
GLHS67EEPW0	Dual			

NOTE: The serial number range involved is LA50900000 to LA 52400000. Dual is a two-digit temperature display. Single is a single-digit display on control.

PROBLEM

The contact in the relay on the board is failing. (Electrolux undertook a rework on standard depth refrigerators with an electronic control mounted in the control box during July and August of 2005)

NOTE: THIS REWORK DID NOT INCLUDE THE COUNTERDEPTH MODELS.

CAUSE

A review of failed product and controls returned from the field indicates that some products were not upgraded in the field. In some cases, service information shows that the service kit was not installed—only the control was replaced. The control can fail in two ways. 1.) The most common is that the compressor will run all the time, or 2.) The compressor will not run at all. This failure does not present a safety problem, but EMA is seeking to replace the control and/or add a relay to prevent any failures in the consumer's home.

SOLUTION

When servicing one of the models listed above, please ensure it has one of the two upgraded control systems installed. The original upgrade kit for products added an additional relay to the machine compartment, completing the electrical connection to the compressor from line one (See Figure 1).

The relay in the electronic control will only control the coil of the new relay, instead of the compressor and condenser fan motor. For models with a two-digit control, use kit number p/n 5303918321 (See Figure 3). For models with a single digit control, use kit number p/n 5303918322 (See Figure 4).

Contact Failing on Refrigerator Relay Board

Production change for all 4A serial number products involves using an upgraded control with the compressor relay mounted on the back of the control (See Figure 2). If the control does not have a relay on the back, ensure there is a relay next to the compressor in the machine compartment. If the control does not have the relay on the back and no relay next to the compressor, order one of the kits listed on the previous page and install the kit.

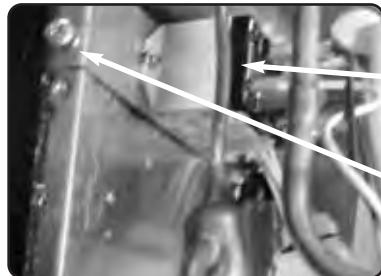
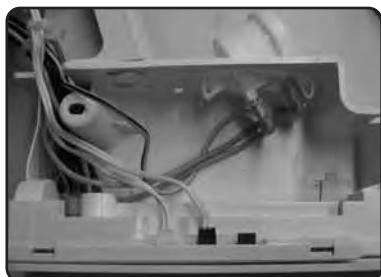


Figure 1

Relay in machine compartment

Bracket and mounting screw

Original Genesis Control
without external relay



New Genesis Control with
compressor relay on back



Figure 2

Two digits in display control



Figure 3

Single digit in display control



Figure 4

Questions Regarding New Side-Mount Icemakers

MODELS

Refrigerators that utilize a side-mount icemaker.

PROBLEM

Answer questions regarding the differences in the side-mount icemaker used in both side-by-side and top freezer refrigerators.

CAUSE

Change in supplier of side-mount icemakers to EMA.

SOLUTION

Some service technicians have questioned why the service replacement icemaker they have received is not identical to the one being removed from a consumer's unit.

All side-mount icemakers used in refrigerators built from 2001 on will interchange regardless of the icemaker supplier. If a consumer has a refrigerator built before 2001, the electrical connection is different; however, a Service Icemaker Replacement Kit (**p/n 5303918277**) may be ordered—this kit will enable newer icemakers to be installed on pre-2001 products.

The only icemaker that will not interchange is on the side-by-side refrigerators with the rear-mounted icemaker (the ice-maker is mounted across the back of the freezer, not on the left side of the freezer). The rear-mount icemaker must be replaced with a rear-mount icemaker (**p/n 241696501**) which may look a little different than the original due to a number of improvements made to the icemaker.

Naturally, products that use side-mount icemakers or rear-mount icemakers must receive the same kind of replacement. Side-mounts and rear-mounts are not interchangeable, however, the supplier that made the icemaker will have no bearing on determining a replacement's validity.



Wiring Changes to Infinite Switch for 30" Free-Standing Smoothtop Ranges

MODELS

Beginning in September 2005, Frigidaire smoothtop models with one or more single radiant elements were affected with this change. Serial numbers VF535xxxx and later are affected by this change.

PROBLEM

No wire is connected to terminal H1 on the infinite switch.

CAUSE

Engineering change.

SOLUTION

None required. A design change made to certain smoothtop models has eliminated the need for a wire connecting from H1 on the switch to the surface heating element on single radiant elements. The L1 side of the power supply is wired directly to the element. Only the L2 side of the power supply is controlled by the infinite switch. The L1 wire on the infinite switch feeds only the pilot, or "element on," indicator light.

The diagrams below illustrate how the two different wiring circuits are configured.

Diagram A
Traditional Surface Element
Wiring Arrangement
(Single Radiant Element)

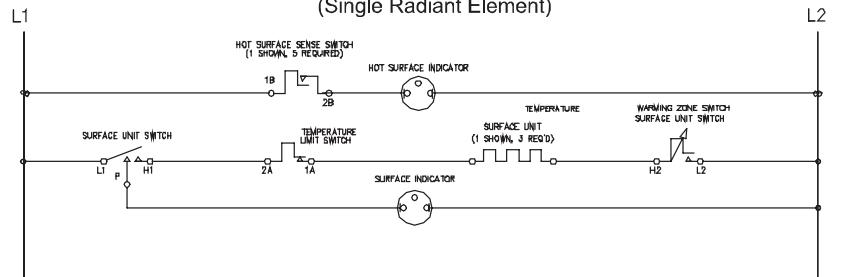
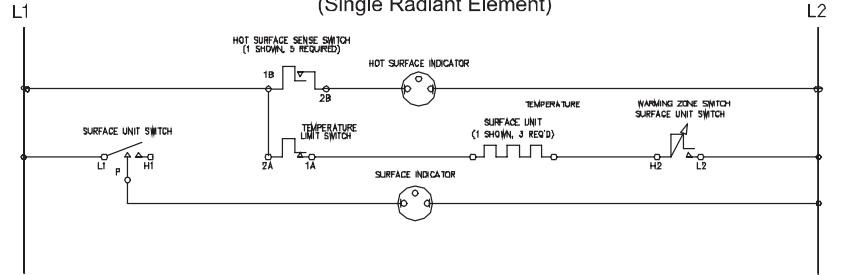


Diagram B
New Design Surface Element
Wiring Arrangement
(Single Radiant Element)





Condensation Forming on Oven Door Inner Glass During Cooking

MODELS

Frigidaire Wall Oven models (single and double)

FEB27S5DB	FEB27S5DC	FEB27S5DS	FEB27S6DB	FEB27S6DC
FEB27S6DQ	FEB27S6DS	FEB27S7DC	GLEB27S9DB	GLEB27S9DQ
GLEB27S9DS	PLEB27S9DC	FEB27T5DB	FEB27T5DC	FEB27T5DS
FEB27T6DB	FEB27T6DC	FEB27T6DQ	FEB27T6DS	FEB27T7DC
GLEB27T9DB	GLEB27T9DQ	GLEB27T9DS	PLEB27T9DC	FEB30S5DB
FEB30S5DC	FEB30S5DS	FEB30S6DB	FEB30S6DC	FEB30S6DQ
FEB30S6DS	FEB30S7DC	GLEB30S9DB	GLEB30S9DQ	GLEB30S9DS
PLEB30S9DC	FEB30T5DB	FEB30T5DC	FEB30T5DS	FEB30T6DB
FEB30T6DC	FEB30T7DQ	FEB30T6DS	FEB30T7DC	GLEB30T9DB
GLEB30T9DQ	GLEB30T9DS	PLEB30T9DC	GLEB27M9EB	GLEB27M9EQ
GLEB27M9EB	GLEB30M9EB	GLEB30M9EQ	GLEB30M9ES	

Frigidaire Slide-In/Drop-In models

FES355EB	FES355ES	FES365EB	FES365EC	FES365EQ
FES365ES	FCS366EB	FCS366EC	FCS366EQ	GLCS389EB
GLCS389EC	GLCS389EQ	GLCS389ES		

PROBLEM

On the listed Frigidaire models, condensation (moisture) may form between the inner door glass panes upon using the oven in any cooking mode.

CAUSE

Moisture from the oven is penetrating the space between the inner door liner and the inner door glass.

SOLUTION

Install gasket kit number 903082-9010 by utilizing the illustrated steps.

Installation Steps:

STEP 1

Door hinge in the unlocked position



STEP 2

Door hinge in the locked position



STEP 3

Remove the door from the unit



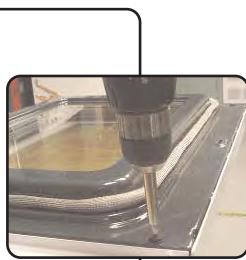
steps continued on next page

Condensation Forming on Oven Door Inner Glass During Cooking

steps continued...

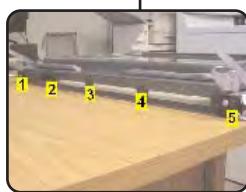
STEP 4

With the outer door glass flat on a table, unscrew the two screws that hold the oven door handle



STEP 5

Unscrew the five screws from the lower oven door glass trim



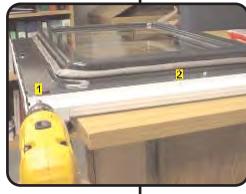
STEP 6

Remove the outer door glass



STEP 7

Unscrew the three screws from both the left and right side door trim



STEP 8

Unscrew the 3 screws from the upper trim



STEP 9

Unscrew the two screws located on the left and right side of the glass



STEP 10

Remove the inner baffle from the inner door liner



STEP 11

Remove the insulation from the inner door liner



STEP 12

Remove the 2 inner glasses and frame from the inner door liner



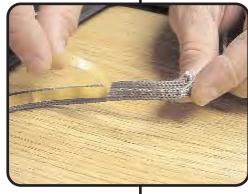
STEP 13

Tear the protective paper off of the adhesive tape from the door gasket...



STEP 14

...do not peel off the protective paper from the gasket; it may peel the adhesive portion off of the gasket completely.



STEP 15

Install the gasket starting at the top corner, as flush as possible to the glass frame
NOTE: Gasket must be installed as shown 1/8" max from the glass frame.



STEP 16

View of the installed gasket.



STEP 17

Views of the proper way to install the screw handle spacers. (models with decorative outer glass only, not with stainless steel models)





Beeping Sound in Control Panel Area 30" Free-Standing Ranges w/Mini Oven

MODELS

30" Frigidaire Free-Standing Ranges with lower mini oven and warmer drawer combination.

PROBLEM

Beeping sound coming from the control panel area with no fault code displayed in the Electronic Oven Control (EOC). The consumer can set the oven lock out feature and the beeping stops.

CAUSE

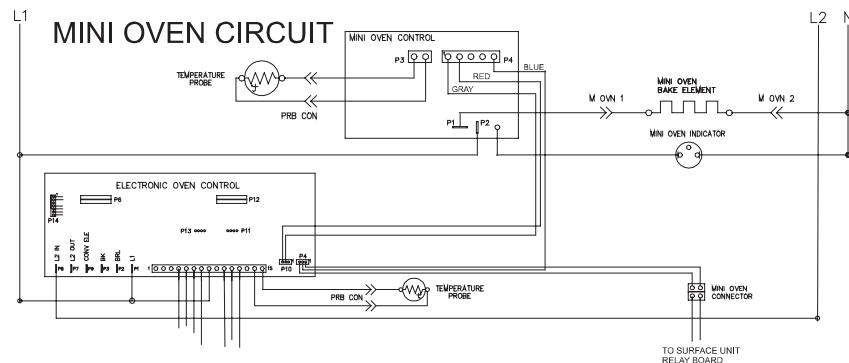
Possible open or shorted mini oven sensor/probe circuit, or mini oven control.

SOLUTION

The mini oven control will beep constantly when it detects a fault condition in the temperature sensor/probe circuit. This may be caused by a runaway heat condition, open or shorted temperature sensor/probe, or faulty sensor/probe connection or harness.

The technician should test the temperature sensor/probe circuit by disconnecting the P3 connector at the mini oven control board and then measuring the resistance between the two purple wires. The resistance of the mini oven temperature sensor/probe should read the same as that of the main oven temperature sensor/probe. If the sensor/probe circuit and harness are good, then replace the mini oven control board.

Photo shows mini oven sensor probe located at bottom right rear of range as viewed from rear just above the drawer glide rail.





Single Radiant Element "Potentiometer" Mounting Shaft Breakage 30" Electric Free-Standing Range with ESEC System

MODELS

Frigidaire ESEC System Models:

CPLEFM99EC/A/C/D
CPLEFMZ9ECA
PLEFM399DC/A/B/C/D
PLEFMZ99EC/A/C/D

Serial Number Range:

VF513xxxxx to VF546xxxxx
VF522xxxxx to VF525xxxxx
VF435xxxxx to VF525xxxxx
VF522xxxxx to VF549xxxxx

PROBLEM

Threaded area on potentiometer housing breaks on single element gray based potentiometer (p/n 316239604).

CAUSE

Mounting bezel hex nut has been over tightened.

NOTE: Maximum torque of mounting nut is 5 inch pounds.

Instructions sheet provided with kit gives instructions on how to torque hex nut without the use of a torque wrench.

SOLUTION

Order Service Kit p/n **5304454273**

Contents:

- (1) **316239611** Potentiometer
- (1) **316247700** Hex Nut
- (1) **316247800** Lock Washer
- (1) **5304454272** Instruction Sheet

Breakage
occurs in the
thread area.



Original (p/n 316239604)



Replacement (p/n 316239611)



Announcement

30" Free-Standing, Self-Clean Gas Ranges w/ Mini Oven—For Use on Natural Gas Only

This product CAN NOT be converted for use on (LP) Gas Liquid Propane

MODELS FGFLMC55xxx, GLGFM96xxxx, LEGFM389xxx, PLGFMZ96xxx

NOTE: All future models not listed at this time are also excluded until further notice via a revised Service Bulletin or Sales Brochure.

SERIAL # All serial numbers starting with "VF".

PROBLEM Oven burner orifice adjustment; air shutter adjustment; and pressure regulator conversion are not accessible.

CAUSE Range is not designed to be converted for use with LP gas.

SOLUTION Range must ONLY be used on NATURAL GAS to meet Agency Requirements.

NOTE: Refer to Model/Serial tag on product to determine fuel type usage.



Built-In Microwave Ovens - Noise Reduction Kit

MODELS GLMB209xxx, PLMB209xx

SERIAL # All starting with "7G" series

PROBLEM Louder than normal operating noise or buzzing sound when unit is running.
Noise is reduced when pressing in on the right side of outer case.

CAUSE Internal fan shroud touching inside wall of outer case.

SOLUTION Install noise reduction pad Kit p/n 5304454990.
Kit includes self-adhesive pad and instruction sheet.



Over the Range (OTR) Microwave Oven—Longer Mounting Screws

MODELS

Production starting with model/serial numbers listed below is supplied with longer 85mm mounting screws; prior models/serial numbers have shorter 60mm screws

CFMV156DB	7G53703268	CGLMV169DQC	7G53103980	FMV156DS	7G53500106
CFMV156DBB	7G53201854	CGLMV169DSC	7G53200236	FMV156DSB	7G53103981
CFMV156DC	7G53703338	CPLMV169DCD	7G53106985	FMV156EMA	7G54303251
CFMV156DCC	7G53201138	FMV156DB	7G53406284	GLMV169DB	7G53404584
CFMV156DS	7G53107020	FMV156DBB	7G53103315	GLMV169DBC	7G53102931
CFMV156DSB	7G53107078	FMV156DC	7G53406527	GLMV169DQ	7G55107686
CGLMV169D	7G53904668	FMV156DCC	7G53105020	GLMV169DQC	7G53004750
CGLMV169DBB	7G54902657	FMV156DQ	7G53703252	GLMV169DS	7G53405388
CGLMV169DBC	7G53200415	FMV156DQB	7G53207464	GLMV169DSC	7G53210350

PROBLEM

When installing OTR Microwave in certain cabinets the mounting screws provided are too short.

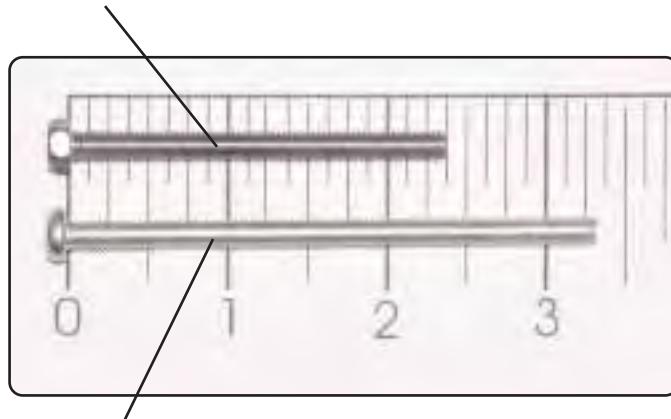
CAUSE

Cabinet base panel is above average thickness.

SOLUTION

Order (2) longer mounting screws p/n 5304453895.

Original Screw P/N 5303318764
Length 60mm (2.36")



Replacement Screw P/N 5304453895
Length 85mm (3.35")



A n n o u n c e m e n t

Door Condensation Kit P/N 903082-9010

M O D E L S **Frigidaire wall oven models (single and double) that may be affected:**

FEB27S5DB	FEB27S5DC	FEB27S5DS	FEB27S6DB
FEB27S6DC	FEB27S6DQ	FEB27S6DS	FEB27S7DC
GLEB27S9DB	GLEB27S9DQ	GLEB27S9DS	PLEB27S9DC
FEB27T5DB	FEB27T5DC	FEB27T5DS	FEB27T6DB
FEB27T6DC	FEB27T6DQ	FEB27T6DS	FEB27T7DC
GLEB27T9DB	GLEB27T9DQ	GLEB27T9DS	PLEB27T9DC
FEB30S5DB	FEB30S5DC	FEB30S5DS	FEB30S6DB
FEB30S6DC	FEB30S6DQ	FEB30S6DS	FEB30S7DC
GLEB30S9DB	GLEB30S9DQ	GLEB30S9DS	PLEB30S9DC
FEB30T5DB	FEB30T5DC	FEB30T5DS	FEB30T6DB
FEB30T6DC	FEB30T6DQ	FEB30T6DS	FEB30T7DC
GLEB30T9DB	GLEB30T9DQ	GLEB30T9DS	PLEB30T9DC
GLEB27M9EB	GLEB27M9EQ	GLEB27M9EB	GLEB30M9EB
GLEB30M9EQ	GLEB30M9ES		

Frigidaire slide-in/drop-in oven models that may be affected:

FES355EB	FES355ES	FES365EB	FES365EC
FES365EQ	FES365ES	FCS366EB	FCS366EC
FCS366EQ	GLCS389EB	GLCS389EC	GLCS389EQ
GLCS389ES			

P R O B L E M Condensation (moisture) forming between the inner door glasses when using the oven.

C A U S E Cooking food with high content of moisture or cooking in a humid climate.

S O L U T I O N Installing the gasket kit number 903082-9010 between the inner door liner and the inner glass will cure the condensation issue.

NOTE: Complete instructions will accompany the kit.



Clock Display Turned OFF By Consumer

MODELS Gas/Electric Cooking Products with ES200 and ES300 Series Electronic Oven Control (EOC)

NOTE: This is a re-issue of Service Bulletin published May 2002; Vol. 22 #4.

PROBLEM The clock will not display the time of day. Customer presses the "Clock" pad on the control and the time of day is displayed but disappears after a few seconds. Clock keeps correct "time of day."

CAUSE Customer holds "Clock" pad down for 15 seconds or more trying to reset the time of day, this generally occurs during time changes in spring or fall. To set "time of day," press clock pad, then either the up or down arrow pads until the correct time of day is reached, release clock pad.

SOLUTION To toggle the clock display ON or OFF, simply press and hold the "Clock" pad for at least 15 seconds. This toggles the clock time display ON or OFF as desired.

Sample ES300 Control and Instructions in Owner's Manual



NOTE: To turn the **time of day** display **OFF** or **ON** in the display press [clock] and hold for 15 seconds (the control will beep once) and then release. This feature does not remove the set time of day from the memory of the control. When the display is turned OFF, the time of day will re-appear for a few seconds any time the [clock] pad is touched.



Eliminating Dripping Moisture from the Vent Tube Assembly

MODELS Frigidaire wall oven models (single and double) that could be affected:

FEB27S5DB	FEB27S5DC	FEB27S5DS	FEB27S6DB
FEB27S6DC	FEB27S6DQ	FEB27S6DS	FEB27S7DC
GLEB27S9DB	GLEB27S9DQ	GLEB27S9DS	PLEB27S9DC
FEB27T5DB	FEB27T5DC	FEB27T5DS	FEB27T6DB
FEB27T6DC	FEB27T6DQ	FEB27T6DS	FEB27T7DC
GLEB27T9DB	GLEB27T9DQ	GLEB27T9DS	PLEB27T9DC
FEB30S5DB	FEB30S5DC	FEB30S5DS	FEB30S6DB
FEB30S6DC	FEB30S6DQ	FEB30S6DS	FEB30S7DC
GLEB30S9DB	GLEB30S9DQ	GLEB30S9DS	PLEB30S9DC
FEB30T5DB	FEB30T5DC	FEB30T5DS	FEB30T6DB
FEB30T6DC	FEB30T6DQ	FEB30T6DS	FEB30T7DC
GLEB30T9DB	GLEB30T9DQ	GLEB30T9DS	PLEB30T9DC
GLEB27M9EB	GLEB27M9EQ	GLEB27M9EB	GLEB30M9EB
GLEB30M9EQ	GLEB30M9ES		

PROBLEM Condensation (moisture) may be dripping into the oven or out of the vent tube.

CAUSE Cooking food with a high content of moisture or cooking in a humid climate.

SOLUTION Installing the "inner and outer scoop kit" (p/n 903087-9010) on both ends of the vent tube assembly will prevent this condensation from dripping in and/or out of the vent tube assembly.

NOTE: The outer part of the kit cannot be installed on the lower portion of a double wall oven.
Complete instructions will accompany the kit.



Fan Delay on Gas Ranges with SpeedBake® or Convection Bake Features

MODELS All Gas range models with Speed Bake® or Convection Bake.

PROBLEM Convection fan does not operate when oven is first turned ON using either the SpeedBake® or Convection Bake or Convection Roast feature—gas models only.

NOTE: Owner's manual does not specify the delayed time required before convection fan operates.

CAUSE The Electronic Oven Control (EOC) is programmed for a delayed start fan operation. This allows air circulation within the oven cavity and through the oven vent flue to meet requirements for proper gas combustion.

SOLUTION Instruct customer on how this feature operates as described.

For Gas SpeedBake® Models:

The convection fan has a six minute delay start operation after being programmed for a baking temperature between 300°F (149°C) to 550°F (288° C) and SpeedBake® has been selected.

NOTE: When a SpeedBake® operation is cancelled and then restarted the six minute time delay begins again.

For Gas Convection Bake/Roast Models:

The convection fan will not turn ON until one of two conditions is met:

1. A six (6) minute delay
2. The programmed set temperature is reached.

The oven can be programmed for convection bake/roast between 325°F (163°C) to 550°F (288°C).

NOTE: When a Convection Bake/Roast operation is cancelled and then restarted, the fan operation will begin as long as the programmed temperature has been met, 325°F (163°C) to 550°F (288°C).

Announcement

Change to Shipping Restraint System on Front-Load Washer Models

MODELS

Frigidaire BLTF2940WES1, BTF2140ES1, FTF2140ES1, FWFB9100ES1,
FWFB9200ES1, GLTF2940ES1, LTF2140ES1, LTF2940ES1

ISSUE

Improved Shipping Restraint System

SOLUTION

The introduction of new shipping hardware has eliminated the need for a rear metal beam.

Starting in mid-October 2005, the front-load washer models listed above will include a new rear shipping hardware system that improves packaging clarity and ease of parts retention.

Washers manufactured with the new packaging system are identified by four yellow shipping spacers (Figure 2), that take the place of the metal shipping beam on the back panel (Figure 1).

NOTE: Removal of shipping hardware should be done at the washer's final operating location.

Old shipping hardware



Figure 1

New shipping hardware



Figure 2

continued on next page

A n n o u n c e m e n t

continued:

**Change to Shipping Restraint System
on Front-Load Washer Models**

Removal Steps:

STEP 1

Remove four (4) bolts and the yellow/white shipping spacers from the back panel.



Figure 3

STEP 2

After removing all four (4) bolts and spacers, remove two yellow-coated metal P-clamps to release the power cord.



Figure 4



Figure 5

STEP 3

Cover all four spacer holes with the hole caps provided in the literature bag.



Figure 6

STEP 4

Remove the front access panel and remove the two foam shipping blocks and tape. Reinstall the access panel.

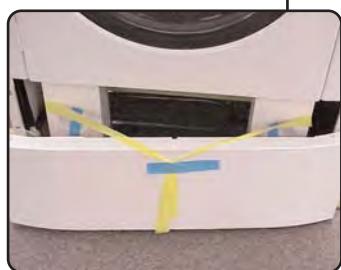


Figure 7

STEP 5

Leave all shipping hardware and foam blocks with the customer. This hardware must be reinstalled when the washer is moved to another location to prevent damage during transit.

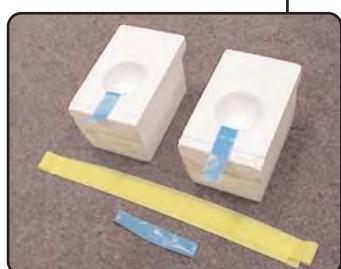


Figure 8

Washer Vibration When Installed on Laundry Pedestal

MODELS BLTF2940WES, BTF2140ES, FTF2140ES, FWFB9100ES, FWFB9200ES,
GLTF2940ES, LTF2140ES, LTF2940ES

PROBLEM Vibration of the washer when installed on pedestal NLPWD15.

CAUSE Displacement of the pedestal related to installation floor types/sites.

SOLUTION Install Rear Panel Kit (p/n 134682000) onto the rear of the pedestal. This will reduce the displacement and help move critical frequencies away from normal operating speeds. If the serial number of the washer is prior to XC53600000, install shock kit p/n 134564200.

Affinity Washers Enter Continuous Cycle Loop, Error Message Displayed

MODELS

ATF6000ES, ATF7000ES, ATFB6000ES, ATFB7000ES, LTF6000ES, LTF7000ES

PROBLEM

After a cycle is selected and the start button is depressed, the display will alternate between the time remaining and "PAU". If any button is depressed, "Err" comes up in the display.

CAUSE

Software issue where someone is hitting or has hit the keys too fast for the debounce timer in the console software to keep up. The washer will get into a continuous loop that causes it to think it is running when in reality it is not.

SOLUTION

New software was introduced on product beginning with serial number XC617.

To correct problem on prior models:

Freestanding washer

1. Remove the washer from the electrical supply.
2. Remove the top panel and disconnect the wire plug to the pressure sensor.
3. Reconnect the washer to the electrical supply.
4. Press start and wait 10 seconds (washer will drop out of the continuous loop).
5. Remove the washer from the electrical supply.
6. Reconnect wire plug to pressure sensor and reinstall the top panel.
7. Reconnect the washer to the electrical supply and verify proper functionality.
8. If same symptoms occur, install a new console control.

Stacked or under-counter washer

1. Remove the washer from the electrical supply.
2. Open the door and remove the wire clamp around the bellows.
3. Pull the bellows off the lip of the front panel from the 1 to 5 o'clock position.
4. Remove the (2) screws securing the door lock/switch assembly to the front panel.
5. Pull the switch assembly into the door opening and unplug the electrical connectors.
6. Reconnect the washer to the electrical supply.
7. Press start and wait 5 minutes (washer will drop out of the continuous loop).
8. Remove the washer from the electrical supply.
9. Plug the electrical connectors into the door lock/switch and reinstall the switch to the front panel.

Wash Motor Making Unusual Noises

MODELS All 18-inch model dishwashers with serial numbers from TH501 thru TH552

PROBLEM The wash motor is making an unusual noise and/or is not draining, washing.

CAUSE The shaft encapsulation on the motor shaft has broken or separated.

SOLUTION Replace the complete motor and sump assembly (p/n 154582601). This assembly consists of the motor and sump including the wash impeller. You will need to remove and reuse the diffuser housing as well as the spray arm and tower. This assembly may be used on other 18-inch models manufactured after 2001 and through 2005.

Lower Wash Rack Redesigned to Allow for Larger Plates

MODELS GLD3450RD, GLD3451RD, PLD3460RD, PLD3465RE

PROBLEM Tall plates in the lower rack are hitting center spray arm even with the upper rack in the highest position.

CAUSE The distance between the two racks is not great enough for an 11-¾ inch dinner plate to be loaded in all locations.

SOLUTION The roller assemblies on the lower rack have been redesigned, lowering the rack by ½-inch. This increases the distance to accommodate the larger dinner plates. The roller assemblies are available as a service kit with instructions, p/n 154573401.

Detergent Getting Stuck in Dispenser

MODELS GLD3450RD, GLD3451RD, PLD3460RD, PLD3465RE

PROBLEM Not all of the detergent is being washed out of the dispenser, or the consumer is using detergent tabs and they are getting stuck in the dispenser.

CAUSE The lower rack has a left side rack extension allowing for a utility shelf above the rack. The front of this extension can interfere with the opening of the detergent dispenser door resulting in inadequate water reaching the detergent. If the dispenser door does not open far enough, tab and gel pack style detergent may not fall free from the dispenser.

SOLUTION The roller assemblies for the lower rack have been redesigned, lowering the rack by $\frac{1}{2}$ ", allowing clearance for the detergent dispenser door to open farther. The service kit number is p/n 154573401. It comes with four wheel assemblies and installation instructions.

Wash Motor and Pump O-Rings

MODELS All dishwashers with a horizontally mounted wash motor

PROBLEM Technician has ordered a horizontally mounted wash motor for replacement and did not receive o-rings needed to complete the installation.

CAUSE The replacement motor is set up as a service part and not as a kit. The part number is listed in the Illustrated Parts List as motor assembly, circulation, w/o o-rings.

SOLUTION If the wash motor needs replacing, order both the front and rear o-rings as separate parts. The part numbers for these two o-rings are:

Front p/n 154247001
Rear p/n 154246901



Information Code "HO" Displays on Electronic Control Dishwasher

MODELS

All electronic control model dishwashers with a digital display.

PROBLEM

The wash cycle is operating properly when an "HO" (Heat Option) code appears in the display and flashes.

CAUSE

The electronic control continually monitors the water temperature in the sump to ensure proper water temperature for cleansing. All electronic control models have in their programming a Temp-Assure setting for the beginning of the main wash segment of each different wash cycle that can be selected. The HO tells the user that the length of the wash cycle has been extended to allow the water to increase in temperature. The HO in the Temp-Assure cycle can appear even if none of the high-temperature options were selected.

SOLUTION

The HO can appear for Temp-Assure, or any of the high temperature options that may be selected. The time for these heat delays can be shortened by making sure the water entering the dishwasher remains HOT. The minimum water temperature at the sink should be 120°F. **The HO in the display is NOT A FAILURE CODE.** It is an information code informing the user the time for the cycle has been extended.

No Sound Blanket on Select Dishwasher Models

MODELS

CDBE241, FDB102S, FDB126R, WDB11NR manufactured after TH601XXXX.

PROBLEM

The sound blanket around the tub was not with the product when the carton was removed.

CAUSE

The sound blanket was removed from the bill of material on the above listed models effective January 1, 2006.

SOLUTION

This is not a manufacturing error; this was a change in these particular products. The blanket is not included with the above listed dishwashers.

Dishwasher Not Receiving Enough Water During Fill

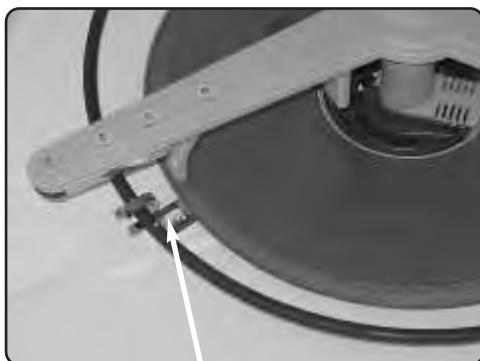
MODELS All 24" model dishwashers manufactured from 1996 through today.

PROBLEM The dishwasher is not receiving enough water during a fill.

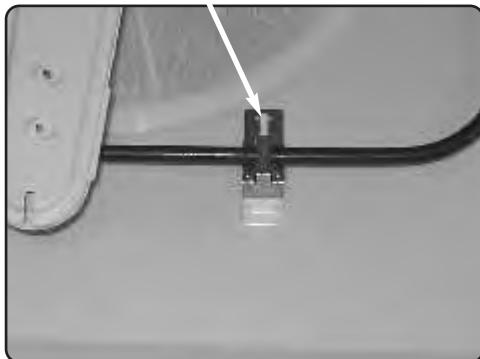
CAUSE The normal water level in the tub on these models is to the bottom of the heater support mounting clips. The amount of water used for a fill is 1.2 gallons for each fill.

SOLUTION Select a cycle and time the fill. The fill time will be 87 seconds for each fill. Once the wash motor has started, open the door and check the water level. With the dishwasher level; the water should come to where the heater mounting clips attach to the tub. See pictures below.

Precision Direct Models



Water level will be to this point



Precision Wash Models

Different Lower Spray Arm Received for Replacement

MODELS All 24" Precision Wash and Tower Wash model dishwashers from 1996 through current models.

PROBLEM The dishwasher is not receiving enough water during a fill.

CAUSE The lower spray arms have been changed to improve performance, lower sound, and help prevent water leaks from the bottom of the door.

SOLUTION The new arms are a direct replacement for the original, and are removed and installed identically. See the pictures below.



Top of Precision Wash lower spray arm.



The new spray arm does not have stakes (3 dots) for mounting the heat shields.



Lower Spray Arm for tower wash models.



Bottom of Tower Wash spray arm showing the stakes (3 dots) removed for mounting the heat shields as well.